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NEW YORK STATE MEDICAL ASSOCIATION.

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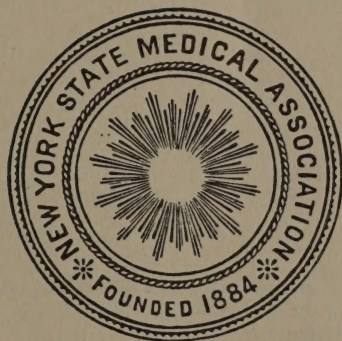
TRANSACTIONS
OF
THE NEW YORK STATE
MEDICAL ASSOCIATION,
FOR THE YEAR 1897,

VOLUME XIV.

EDITED FOR THE ASSOCIATION

By E. D. FERGUSON, M. D.,

OF RENSSELAER COUNTY.



PUBLISHED BY THE ASSOCIATION:

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OFFICERS AND COUNCIL FOR 1896-'97.

PRESIDENT.

CHARLES PHELPS, M. D., Fifth District, New York County.

VICE-PRESIDENTS.

FIRST DISTRICT, R. N. COOLEY, M. D., Oswego County.

SECOND DISTRICT, E. M. LYON, M. D., Clinton County.

THIRD DISTRICT, ROBERT ABERDEIN, M. D., Onondaga County.

FOURTH DISTRICT, ALVIN A. HUBBELL, M. D., Erie County.

SECRETARY AND TREASURER.

E. D. FERGUSON, M. D., Rensselaer County.

CHAIRMAN OF THE LIBRARY COMMITTEE.

J. W. S. GOULEY, M. D., New York County.

MEMBER OF THE COUNCIL AT LARGE.

F. H. WIGGIN, M. D., New York County.

ELECTED MEMBERS OF THE COUNCIL.

FIRST DISTRICT, W. H. ROBB, M. D., Montgomery County.

“ “ JOHN P. SHARER, M. D., Herkimer County.

SECOND DISTRICT, G. E. McDONALD, M. D., Schenectady County.

“ “ THOS. H. HANNAN, M. D., Rensselaer County.

THIRD DISTRICT, W. L. AYER, M. D., Tioga County.

“ “ LEROY J. BROOKS, M. D., Chenango County.

FOURTH DISTRICT, E. M. MOORE, JR., M. D., Monroe County.

“ “ WM. M. BEMUS, M. D., Chautauqua County.

FIFTH DISTRICT, JOHN G. TRUAX, M. D., New York County.

“ “ C. E. DENISON, M. D., New York County.

COMMITTEE OF ARRANGEMENTS FOR 1896-'97.

CHARLES PHELPS, PRESIDENT.

E. D. FERGUSON, SECRETARY.

Ex-Officio Members of the Committee.

JOHN G. TRUAX, *Chairman.*

CHARLES E. DENISON, *Secretary.*

JAMES C. MACKENZIE.

F. A. BALDWIN.

JOSEPH D. BRYANT.

AUSTIN FLINT.

JOHN W. S. GOULEY.

JOHN SHRADY.

E. H. SQUIBB.

J. R. VANDERVEER.

F. H. WIGGIN.

OFFICERS AND COUNCIL FOR 1897-'98.

The Fifteenth Annual Meeting will be held at the Mott Memorial Library, in New York City, on October 18, 19, and 20, 1898.

PRESIDENT.

DOUGLAS AYRES, M. D., Fort Plain, Montgomery County.

VICE-PRESIDENTS.

SECOND DISTRICT, C. E. FRITTS, M. D.,
Hudson, Columbia County.

THIRD DISTRICT, H. W. CARPENTER, M. D.,
Oneida, Madison County.

FOURTH DISTRICT, C. C. FREDERICK, M. D.,
Buffalo, Erie County.

FIFTH DISTRICT, N. W. LEIGHTON, M. D.,
Brooklyn, Kings County.

SECRETARY AND TREASURER.

E. D. FERGUSON, M. D., Troy, Rensselaer County.

CHAIRMAN OF THE LIBRARY COMMITTEE.

J. W. S. GOULEY, M. D., 11 E. 43d St.,
New York, New York County.

MEMBER OF THE COUNCIL AT LARGE.

F. H. WIGGIN, M. D., 55 W. 36th St.,
New York, New York County.

ELECTED MEMBERS OF THE COUNCIL.

FIRST DISTRICT, JOHN P. SHARER, M. D.,
Little Falls, Herkimer County; term expires 1898.

“ “ W. H. ROBB, M. D.,
Amsterdam, Montgomery County; term expires 1899.

- SECOND DISTRICT, THOMAS H. HANNAN, M. D.,
Hoosick Falls, Rensselaer County ; term expires 1898.
- “ DISTRICT, E. M. LYON, M. D.,
Plattsburgh, Clinton County ; term expires 1899.
- THIRD DISTRICT, LEROY J. BROOKS, M. D.,
Norwich, Chenango County ; term expires 1898.
- “ “ W. L. AYER, M. D.,
Owego, Tioga County ; term expires 1899.
- FOURTH DISTRICT, WILLIAM M. BEMUS, M. D.,
Jamestown, Chautauqua County ; term expires 1898.
- “ DISTRICT, Z. J. LUSK, M. D.,
Warsaw, Wyoming County ; term expires 1899.
- FIFTH DISTRICT, C. E. DENISON, M. D.,
113 W. 12th St., New York City ; term expires 1898.
- “ “ JOHN G. TRUAX, M. D.,
17 E. 127th St., New York City ; term expires 1899.

OFFICERS OF THE BRANCH ASSOCIATIONS FOR 1898.

FIRST OR NORTHERN BRANCH.

*The Fourteenth Annual Meeting will be held as appointed by
the President.*

OFFICERS.

PRESIDENT, DOUGLAS AYRES, M. D.,
Fort Plain, Montgomery County.
SECRETARY, E. H. DOUGLAS, M. D.,
Little Falls, Herkimer County.

EXECUTIVE COMMITTEE.

. Fulton County.
THOMAS MCGANN, M. D., Wells, Hamilton County.
W. D. GARLOCK, M. D., Little Falls, Herkimer County.
J. MORTIMER CRAWF, M. D., Watertown, Jefferson County.
ALBERT A. JOSLIN, M. D., Martinsburg, Lewis County.
N. A. CALDWELL, M. D., Hageman's Mills, Montgomery County.
G. ALDER BLUMER, M. D., Utica, Oneida County.
E. F. MARSH, M. D., Fulton, Oswego County.
GUY REUBEN COOK, M. D., Louisville, St. Lawrence County.

SECOND OR EASTERN BRANCH.

*The Fourteenth Annual Meeting will be held at Troy, Rensselaer
County, on the last Thursday in June, 1898.*

OFFICERS.

PRESIDENT, C. E. FRITTS, M. D., Hudson, Columbia County.
SECRETARY, JOSEPH E. BAYNES, M. D.,
Troy, Rensselaer County.

EXECUTIVE COMMITTEE.

W. B. SABIN, M. D., West Troy, Albany County.
E. M. LYON, M. D., Plattsburgh, Clinton County.
C. E. FRITTS, M. D., Hudson, Columbia County.
F. J. D'AVIGNON, M. D., Au Sable Forks, Essex County.
GEORGE CONKLING, M. D., Durham, Greene County.
F. J. TOMPKINS, M. D., Lansingburgh, Rensselaer County.
F. F. GOW, M. D., Schuylerville, Saratoga County.
H. C. VAN ZANDT, M. D., Schenectady, Schenectady County.
H. F. KINGSLEY, M. D., Schoharie, Schoharie County.
D. J. FITZGERALD, M. D., Glens Falls, Warren County.
JOHN LAMBERT, M. D., Salem, Washington County.

THIRD OR CENTRAL BRANCH.

The Fourteenth Annual Meeting will be held at Syracuse, Onondaga County, on the first Thursday in June, 1898.

OFFICERS.

PRESIDENT, H. W. CARPENTER, M. D.,
Oneida, Madison County.
SECRETARY, F. W. HIGGINS, M. D., Cortland, Cortland County.

EXECUTIVE COMMITTEE.

J. G. ORTON, M. D., Binghamton, Broome County.
W. R. LAIRD, M. D., Auburn, Cayuga County.
F. W. ROSS, M. D., Elmira, Chemung County.
L. J. BROOKS, M. D., Norwich, Chenango County.
H. O. JEWETT, M. D., Cortland, Cortland County.
W. B. MORROW, M. D., Walton, Delaware County.
MARTIN CAVANA, M. D., Oneida, Madison County.
ELY VAN DE WARKER, M. D., Syracuse, Onondaga County.
J. J. SWEET, M. D., Unadilla, Otsego County.
B. T. SMELTZER, M. D., Havana, Schuyler County.
F. G. SEAMAN, M. D., Seneca Falls, Seneca County.
W. L. AYER, M. D., Owego, Tioga County.
C. P. BIGGS, M. D., Ithaca, Tompkins County.

FOURTH OR WESTERN BRANCH.

The Fourteenth Annual Meeting will be held at Buffalo, Erie County, on the Second Tuesday in May, 1898.

OFFICERS.

PRESIDENT, C. C. FREDERICK, M. D., Buffalo, Erie County.
SECRETARY, WM. H. THORNTON, M. D.,
570 Niagara St., Buffalo, Erie County.

EXECUTIVE COMMITTEE.

B. C. WAKELY, M. D., Angelica, Alleghany County.
S. J. MUDGE, M. D., Olean, Cattaraugus County.
W. M. BEMUS, M. D., Johnstown, Chautauqua County.
C. C. WYCKOFF, M. D., Buffalo, Erie County.
M. W. TOWNSEND, M. D., Bergen, Genesee County.
F. H. MEYER, M. D., Moscow, Livingston County.
E. M. MOORE, JR., M. D., Rochester, Monroe County.
G. P. EDDY, M. D., Lewiston, Niagara County.
F. R. BENTLY, M. D., Cheshire, Ontario County.
H. C. TOMPKINS, M. D., Knowlesville, Orleans County.
C. S. PARKHILL, M. D., Hornellsville, Steuben County.
DARWIN COLVIN, M. D., Clyde, Wayne County.
Z. J. LUSK, M. D., Warsaw, Wyoming County.
WM. OLIVER, M. D., Penn Yan, Yates County.

FIFTH OR SOUTHERN BRANCH.

The Thirteenth Annual Meeting will be held at Brooklyn, Kings County, on the Fourth Tuesday in May, 1898.

OFFICERS.

PRESIDENT, N. W. LEIGHTON, M. D.,
143 Taylor St., Brooklyn, Kings County.
SECRETARY, E. H. SQUIBB, M. D.,
P. O. Box 760, Brooklyn, Kings County.

EXECUTIVE COMMITTEE.

- WILLIAM CRAMER, M. D., Poughkeepsie, Dutchess County.
WM. McCOLLOM, M. D., Brooklyn, Kings County.
A. D. RUGGLES, M. D., New York, New York County.
M. C. CONNER, M. D., Middletown, Orange County.
G. W. MURDOCK, M. D., Cold Spring, Putnam County.
E. G. RAVE, M. D., Hicksville, Queens County.
H. C. JOHNSTON, M. D., New Brighton, Richmond County.
W. A. HULSE, M. D., Bay Shore, Suffolk County.
C. W. PIPER, M. D., Wurtsborough, Sullivan County.
H. VAN HOEVENBERG, M. D., Kingston, Ulster County.
H. E. SCHMID, M. D., White Plains, Westchester County.

LIST OF PRESIDENTS AND VICE-PRESIDENTS
FROM THE FOUNDING OF THE ASSOCIATION.

1884.

PRESIDENT.

HENRY D. DIDAMA, M. D., Onondaga County, Third District.

VICE-PRESIDENTS.

FIRST DISTRICT, J. MORTIMER CRAWE, M. D., Jefferson County.

SECOND DISTRICT, TABOR B. REYNOLDS, M. D., Saratoga County.

FOURTH DISTRICT, B. L. HOVEY, M. D., Monroe County.

FIFTH DISTRICT, *N. C. HUSTED, M. D., Westchester County.

1885.

PRESIDENT.

*JOHN P. GRAY, M. D., Oneida County, First District.

VICE-PRESIDENTS.

SECOND DISTRICT, W. H. ROBB, M. D., Montgomery County.

THIRD DISTRICT, JOHN G. ORTON, M. D., Broome County.

FOURTH DISTRICT, JOSEPH C. GREENE, M. D., Erie County.

FIFTH DISTRICT, *J. C. HUTCHINSON, M. D., Kings County.

1886.

PRESIDENT.

E. M. MOORE, M. D., Monroe County, Fourth District.

VICE-PRESIDENTS.

FIRST DISTRICT, *WILLIAM GILLIS, M. D., Franklin County.

SECOND DISTRICT, H. C. VAN ZANDT, M. D., Schenectady County.

THIRD DISTRICT, *FREDERICK HYDE, M. D., Cortland County.

FIFTH DISTRICT, *J. G. PORTEOUS, M. D., Dutchess County.

*Deceased.

1887.

PRESIDENT.

*ISAAC E. TAYLOR, M. D., New York County, Fifth District.

VICE-PRESIDENTS.

FIRST DISTRICT, JOHN P. SHARER, M. D., Herkimer County.

SECOND DISTRICT, L. C. DODGE, M. D., Clinton County.

THIRD DISTRICT, *GEORGE W. AVERY, M. D., Chenango County.

FOURTH DISTRICT, DARWIN COLVIN, M. D., Wayne County.

1888.

PRESIDENT.

JOHN CRONYN, M. D., Erie County, Fourth District.

VICE-PRESIDENTS.

FIRST DISTRICT, BYRON DE WITT, M. D., Oswego County.

SECOND DISTRICT, ROBERT SELDEN, M. D., Greene County.

THIRD DISTRICT, CHARLES W. BROWN, M. D., Chemung County.

FIFTH DISTRICT, EDWIN BARNES, M. D., Dutchess County.

1889.

PRESIDENT.

*WILLIAM T. LUSK, M. D., New York County, Fifth District.

VICE-PRESIDENTS.

FIRST DISTRICT, S. H. FRENCH, M. D., Montgomery County.

SECOND DISTRICT, *R. C. McEWEN, M. D., Saratoga County.

THIRD DISTRICT, ELIAS LESTER, M. D., Seneca County.

FOURTH DISTRICT, T. D. STRONG, M. D., Chautauqua County.

1890.

PRESIDENT.

JOHN G. ORTON, M. D., Broome County, Third District.

* Deceased.

VICE-PRESIDENTS.

FIRST DISTRICT, DOUGLAS AYRES, M. D., Montgomery County.
SECOND DISTRICT, * M. H. BURTON, M. D., Rensselaer County.
FOURTH DISTRICT, E. M. MOORE, JR., M. D., Monroe County.
FIFTH DISTRICT, WILLIAM MCCOLLOM, M. D. (vice WILLIAM
B. EAGER, deceased), Kings County.

1891.

PRESIDENT.

STEPHEN SMITH, M. D., New York County, Fifth District.

VICE-PRESIDENTS.

FIRST DISTRICT, DOUGLAS AYRES, M. D., Montgomery County.
SECOND DISTRICT, A. T. VAN VRANKEN, M. D., Albany County.
THIRD DISTRICT, J. D. TRIPP, M. D., Cayuga County.
FOURTH DISTRICT, R. J. MENZIE, M. D., Livingston County.

1892.

PRESIDENT.

* JUDSON B. ANDREWS, M. D., Erie County, Fourth District.

VICE-PRESIDENTS.

FIRST DISTRICT, W. D. GARLOCK, M. D., Herkimer County.
SECOND DISTRICT, G. E. McDONALD, M. D., Schenectady County.
THIRD DISTRICT, LEROY J. BROOKS, M. D., Chenango County.
FIFTH DISTRICT, H. VAN HOEVENBERG, M. D., Ulster County.

1893.

PRESIDENT.

S. B. W. McLEOD, M. D., New York County, Fifth District.

VICE-PRESIDENTS.

FIRST DISTRICT, R. N. COOLEY, M. D., Oswego County.
SECOND DISTRICT, J. C. HANNAN, M. D., Rensselaer County.
THIRD DISTRICT, N. JACOBSON, M. D., Onondaga County.
FOURTH DISTRICT, Z. J. LUSK, M. D., Wyoming County.

* Deceased.

1894.

PRESIDENT.

THOS. D. STRONG, M. D., Chautauqua County, Fourth District.

VICE-PRESIDENTS.

FIRST DISTRICT, *ISAAC DE ZOUCHE, M. D., Fulton County.

SECOND DISTRICT, J. C. BENHAM, M. D., Columbia County.

THIRD DISTRICT, HOMER O. JEWETT, M. D., Cortland County.

FIFTH DISTRICT, J. D. RUSHMORE, M. D., Kings County.

1895.

PRESIDENT.

AUSTIN FLINT, M. D., New York County, Fifth District.

VICE-PRESIDENTS.

FIRST DISTRICT, DANIEL KLOCK, M. D., Montgomery County.

SECOND DISTRICT, W. H. HODGMAN, M. D., Saratoga County.

THIRD DISTRICT, F. W. PUTNAM, M. D., Broome County.

FOURTH DISTRICT, M. W. TOWNSEND, M. D., Genesee County.

1896.

PRESIDENT.

DARWIN COLVIN, M. D., Wayne County, Fourth District.

VICE-PRESIDENTS.

FIRST DISTRICT, C. H. GLIDDEN, M. D., Herkimer County.

SECOND DISTRICT, THOMAS WILSON, M. D., Columbia County.

THIRD DISTRICT, F. G. SEAMAN, M. D., Seneca County.

FIFTH DISTRICT, J. R. VANDERVEER, M. D., Orange County.

1897.

PRESIDENT.

CHARLES PHELPS, M. D., New York County, Fifth District.

* Deceased.

VICE-PRESIDENTS.

FIRST DISTRICT, R. N. COOLEY, M. D., Oswego County.

SECOND DISTRICT, E. M. LYON, M. D., Clinton County.

THIRD DISTRICT, ROBERT ABERDEIN, M. D., Onondaga County.

FOURTH DISTRICT, ALVIN A. HUBBELL, M. D., Erie County.

LIST OF FELLOWS REGISTERED AT THE FOUR-
TEENTH ANNUAL MEETING IN
NEW YORK CITY.

Held October 12, 13, and 14, 1897.

FIRST DISTRICT.

HERKIMER COUNTY.

Douglas, Edgar H., Little Falls. Sharer, John P., Little Falls.

MONTGOMERY COUNTY.

Ayres, Douglas, Fort Plain. Robb, William H., Amsterdam.
Johnson, R. G., Amsterdam.

SECOND DISTRICT.

CLINTON COUNTY.

Lyon, E. M., Plattsburgh.

GREENE COUNTY.

Selden, Robert, Catskill.

RENSSELAER COUNTY.

Cahill, John T., Hoosick Falls. Hannan, J. C., Hoosick Falls.
Ferguson, E. D., Troy. Hannan, T. H., Hoosick Falls.

THIRD DISTRICT.

BROOME COUNTY.

Orton, J. G., Binghamton.

CHENANGO COUNTY.

Brooks, Leroy J., Norwich.

MADISON COUNTY.

Carpenter, H. W., Oneida.

ONONDAGA COUNTY.

Didama, H. D., Syracuse.

Van de Warker, Ely, Syracuse.

OTSEGO COUNTY.

Leaning, J. K., Cooperstown.

FOURTH DISTRICT.

CHAUTAUQUA COUNTY.

Strong, T. D., Westfield.

ERIE COUNTY.

Bennett, Arthur G., Buffalo.

Thornton, W. H., Buffalo.

Cohen, Bernard, Buffalo.

MONROE COUNTY.

Hovey, B. L., Rochester.

WAYNE COUNTY.

Landon, N. E., Newark.

WYOMING COUNTY.

Ellinwood, A. G., Attica.

FIFTH DISTRICT.

DUTCHESS COUNTY.

Julian, John M., Pleasant Valley. LeRoy, J. D., Pleasant Valley.

KINGS COUNTY.

Bierwirth, J. C., Brooklyn.	Milbury, Frank S., Brooklyn.
Coffin, Lawrence, Brooklyn.	Russell, Wm. G., Brooklyn.
Huestis, W. B., Brooklyn.	Squibb, E. H., Brooklyn.
Jenkins, J. A., Brooklyn.	Squibb, E. R., Brooklyn.
Leighton, N. W., Brooklyn.	Steinke, H. C. O., Brooklyn.
Lloyd, T. M., Brooklyn.	Sullivan, J. D., Brooklyn.
North, Nelson L., Brooklyn.	

NEW YORK COUNTY.

Baldwin, Frederick A., New York.	Lynch, P. J., New York.
Bryant, J. D., New York.	MacGregor, J. R., New York.
Davis, J. Griffith, New York.	Mackenzie, J. C., New York.
Davis, Robert C., New York.	Manley, T. H., New York.
DeLandeta, I. B., New York.	McLeod, Johnston, New York.
Delphey, Eden V., New York.	McLeod, S. B. W., New York.
Dennis, F. S., New York.	Oppenheimer, S., New York.
Denison, C. E., New York.	Phelps, Charles, New York.
Denison, E., New York.	Purple, S. S., New York.
Dudley, A. P., New York.	Ruggles, A. D., New York.
Eliot, Ellsworth, New York.	Shrady, John, New York.
Erdmann, John F., New York.	Silver, Henry M., New York.
Flint, Austin, New York.	Smith, S. W., New York.
Gouley, J. W. S., New York.	Smith, Stephen, New York.
Harris, E. Eliot, New York.	Syms, Parker, New York.
Harrison, Geo. T., New York.	Truax, John G., New York.
Hepburn, Neil J., New York.	Tucker, C. P., New York.
Hillis, T. J., New York.	Van Gieson, W. A., New York.
Janvrin, J. E., New York.	Walsh, S. J., New York.
Judson, A. B., New York.	Washburn, W., New York.
Lockwood, C. E., New York.	Wiggin, F. H., New York.
Ludlow, O. C., New York.	

ORANGE COUNTY.

Conner, M. C., Middletown. Vanderveer, J. R., Monroe.

H. W. WANDLESS, M. D., DALLAS. . . Delegate.

ADDRESS OF WELCOME AND REPORT OF THE COMMITTEE OF ARRANGEMENTS.

By C. E. DENISON, M. D., Secretary of the Committee.

GENTLEMEN: On behalf of the Committee of Arrangements, I extend a hearty welcome to the Fellows of the Association, and to all visiting friends, to this the fourteenth annual meeting of the New York State Medical Association.

The delay in receiving your programme this year was partly due to the lateness in hearing from the Fellows, and to the dilatoriness of the printer. We have adopted another method of sending the programmes, so that we hope you will have no cause to complain that they were not received in season.

The address of the President will take place this evening at 8 o'clock.

The discussion of the subject of the abuse of medical charity is of interest to all, and the effect of medical abuse is shown in the village and city in equal proportion.

The scientific papers in the five districts of the state are in the following proportions:

First District	.	.	.	.	.	.	.	.	3
Second "	.	.	.	.	.	.	.	.	2
Third "	.	.	.	.	.	.	.	.	2
Fourth "	.	.	.	.	.	.	.	.	4
Fifth "	.	.	.	.	.	.	.	.	27
Other States	.	.	.	.	.	.	.	.	3

In the sixty counties of the state, Fellows from eleven counties have contributed as follows:

First District,	Herkimer County	.	.	.	.	1
"	"	Montgomery County	.	.	.	2
Second	"	Rensselaer	"	.	.	3
Third	"	Cortland	"	.	.	1
"	"	Madison	"	.	.	1
"	"	Onondaga	"	.	.	1
Fourth	"	Erie	"	.	.	3
"	"	Genesee	"	.	.	1
Fifth	"	Kings	"	.	.	3
"	"	New York	"	.	.	22
"	"	Westchester	"	.	.	2

In subject-matter there will be found on

Medicine	.	.	.	.	.	.	.	10
Charity Abuse	.	.	.	.	.	.	.	15
Therapeutics	.	.	.	.	.	.	.	1
Surgery	.	.	.	.	.	.	.	11
Nemology	.	.	.	.	.	.	.	1
Gynaecology	.	.	.	.	.	.	.	5
Obstetrics	.	.	.	.	.	.	.	4

The following changes and additions have been made since the programme was issued:

Dr. H. D. Didama, of Onondaga County.

Dr. L. A. Saxer, of Onondaga County.

Dr. W. D. Garlock, of Herkimer County, will read a paper, "The Treatment of Deficient Circulation of the Blood."

Dr. F. O. Donohue, of Onondaga County, will present a paper on "Echoes of the Twelfth International Medical Congress at Moscow."

The Committee extend a cordial invitation to the Fellows of the Association, to visitors and delegates, to the collation on Wednesday evening.

THE PRESIDENT'S ANNUAL ADDRESS.—THE
CAUSES OF A DECLINE IN THE AVERAGE
INCOME OF GENERAL PRACTITIONERS OF MEDICINE.

BY CHARLES PHELPS, M. D., of New York County.

October 15, 1897.

The attention of the medical profession has been of late somewhat anxiously directed to a conceded lessening of its pecuniary returns. There seems sufficient reason to believe that the average income of medical men has been seriously diminished. It is true, that, at the present time, a certain number of specialists, operating surgeons, and consulting physicians in large cities receive even extravagant compensation, but the greater number of medical men who constitute the rank and file of the profession, the family physicians and general practitioners, have suffered a grievous reduction in their professional income. This pecuniary loss has been, perhaps, especially felt in this city, and the profound impression it has produced is demonstrated by the organised effort which was made during the last winter to obtain relief by legislative enactment.

Actuated by the belief that abuse of medical charity is responsible in great part for the financial depression in professional business which has recently existed, medical societies and a very considerable percentage of individual physicians in New York were enlisted in an effort to restrict the charity of hospitals and dispensaries to those who are its proper recipients. This attempt to obtain legislative relief, which was as energetically and enthusiastically urged by those who were beyond the necessity for such action as it was by those less fortunately placed in life, failed to receive executive approval, and is referred to at this time only as

evidence of the general recognition of the reality and extent of the evil which has been assumed.

It is a mistake to suppose that the shrinkage in the revenue of the great body of physicians is solely attributable to an unwarranted increase in gratuitous public aid to the sick, or to any other single agency. The causes of all notable changes in social conditions are complex, and the most effective are likely to be general rather than specific. The business of professional men has a purely commercial aspect, and, like that of the merchant, is not only influenced by individual aptitude, but is subject to conditions beyond individual control; it is governed by the universal law of supply and demand, it shares in the general prosperity or financial depression of the community, and its conduct may, of necessity, be radically changed by the introduction of new economic methods, or by the application to practical affairs of new ethical standards evolved from prevalent modes of thought and forms of mental activity.

In a review of the causes which may reasonably be supposed to account for the loss of professional income to medical men, the one which is logically first may, at the same time, be regarded as of most essential importance. It is demonstrable that the total amount of sickness in the community has very considerably decreased, and the aggregate of professional fees must, in consequence, be correspondingly diminished. If it cannot be said with exactitude that people who are well have no use for the ministrations of the physician, it may be assumed that imaginary illness will always exist as a measurably fixed quantity, and that the number of those who are really ill will still primarily determine the amount and variations of the physician's annual revenue. The improved condition of the public health, which has resulted from advances made in the study of pathology and of general hygiene, and from the practical application of this knowledge in public sanitation, is beyond question. The discovery of pathogenic germs as the direct cause of disease and of the conditions under which they are

produced, propagated, and destroyed, has been utilised for its prevention by the adoption of means for their comprehensive destruction, and for the establishment of new conditions under which their reproduction is limited or rendered impossible.

The number of diseases which can be traced to the action of specific bacilli and which can be classed with those which are preventible, is constantly augmented, and the study of preventive medicine has become of paramount interest to both surgeons and physicians, though it certainly has not been conducive to their pecuniary profit.

The practical work suggested by the conclusions reached in the laboratory has been so intelligently and efficiently directed in this city and elsewhere as not only to justify its theoretical basis and to satisfy the medical profession, but even to convince the judgment of the general public of its beneficence, notwithstanding the enormous expense which it has entailed and the apparent invasion of personal rights which it has sometimes necessitated. Specific instances of the eradication or limitation of disease by the well-directed action of the health department of this city may be readily cited. Epidemic dysentery has become unknown. Variola has practically ceased to exist, and systematic compulsory vaccination by the agents of the health board has at the same time almost destroyed a source of once considerable revenue to the general practitioner. Typhus fever occurs only in sporadic cases of direct importation. Typhoid fever has become comparatively infrequent. The enforcement of a reasonable standard of purity in milk supplied to the city, and of sanitary regulations in regard to the plumbing of houses, has greatly diminished the number of gastro-intestinal disorders, as has the better hygienic care of schools and tenements those of the respiratory tract. The isolation of all cases of measles, scarlet fever, and diphtheria, and the subsequent use of thorough disinfective processes, have minimised the danger of contagion and correspondingly reduced the frequency of their occurrence.* Epidemic influ-

enza, malarial fevers, and rheumatism, unhindered by official sanitary restrictions, pay undiminished toll to our profession.

It would be a grave injustice not to acknowledge the essential aid rendered to the sanitary authorities by physicians in private practice, who have not only made possible the enforcement of sanitary regulations which would have been otherwise impracticable, but have striven as assiduously for the prevention as for the cure of disease in the families entrusted to their care.

Aside from the decrease in the number of cases of illness which present themselves, some diminution in the amount of work to be done by the physician may perhaps fairly be attributed to the recent employment of better methods of treatment, by which the duration and severity of many diseases have been sensibly lessened. The influence of the assumed greater cleanliness of the streets in this city is more problematical. If something has been gained by the elaborate system of cleansing which has been introduced, it has possibly been more than counterbalanced by the wholesale disruption of the principal thoroughfares, which for some reason not wholly disconnected with the exigencies of politics, or more inscrutable causes, have remained in a scandalous condition through the present summer.

The improvement in the health of the community, which has resulted from a better knowledge of the proximate causes of disease, and from more efficient employment of means for its prevention, has been so gradual that its realisation as a fact related to a decrease in the aggregate of medical fees is even yet imperfect. General forces which are gradual in their operation are not always immediately connected with all their effects, and, as in this instance, may fail of proper recognition, if more direct and tangible causes are apparent.

The decrease of sickness may be, to some extent, estimated from the mortuary records. From a table prepared through the kindness of Dr. Roger S. Tracy, register of records, it will be seen that the number of deaths occurring

during the first eight months of the current year in this city from certain diseases selected as illustrative, and in total, is notably smaller than during the same period in 1895 or 1896. The comparison is necessarily confined to fatal cases, but as these have been found to hold a fixed relation to the whole number of cases in which illness is sufficiently severe to confine the patient to bed, it is sufficient for the purpose.

TOTAL NUMBER OF DEATHS AND DEATHS FROM CERTAIN CAUSES,
JANUARY TO AUGUST, INCLUSIVE, 1895-1897.

CAUSES OF DEATH.	1895.	1896.	1897.
Total deaths.....	30,699	30,307	26,866
Diphtheria.....	1,194	1,132	1,034
Pneumonia.....	4,094	4,075	3,200
Typhoid fever.....	155	150	155
Malarial fever.....	49	68	80
Phthisis.....	3,523	3,481	3,243
Scarlet fever.....	397	311	350
Diarrhœal diseases.....	2,464	2,380	1,917
Respiratory diseases.....	6,019	5,607	4,542

It will be observed that, while the total number of deaths was very nearly the same in the eight months of 1896 as in the corresponding months of 1895, it was reduced almost 14 per cent. during the same period in 1897. This statement is independent of the increase of population, which would make the actual reduction in the death-rate appreciably greater.

The proportion of trivial to serious cases of illness cannot be statistically expressed, but it is known in the experience of every physician to be disproportionately large. It is similarly known that the lessened demand for the services of the physician in trivial illness, in which the patient may or may

not be confined to the house, but not to the bed, is even more notable than the decrease in the number of the more serious or fatal cases. The individual experience of the physician is corroborated by that of the pharmacist. The greatly diminished number of prescriptions dispensed has been noted and discussed in pharmacies generally, and as it is our habit to prescribe quite as freely for trivial ailments as for mortal sickness, the business of the compounder of medicines reflects that of the physician, and indicates in its decrease that patients, whether gravely or slightly ill, have grown fewer.

The reduction of income suffered by the physician in consequence of the better health of the community, may thus be attributed to the smaller number of minor, as well as of more serious, cases which actually occur. There is another reason for the leanness of the doctors' exchequer during the past year, to be found in the general business depression and in the attenuation of the incomes of all sorts and conditions of men. The depreciation in the value of investments and their smaller returns, the stagnation of trade in the markets and upon the exchanges, the chronic distress of the working men, have necessitated the exercise of economy at the extremes of society and in every station of life. People of moderate means who have not deprived themselves of all the luxuries to which they have been accustomed, have limited the number and exercised discretion in the choosing of those which they have retained. Medical services, long recognised by the general practitioner as quite unnecessary, except as they allay the apprehensions or relieve the *ennui* of the patient, have come to be more nearly appreciated by the patient himself at their exact value. The physician has been conscientious, but he has given the attention which has been demanded; now, it happens that when he suggests that a daily visit is unnecessary, he is oftener taken at his word; or the man with some trivial ailment waits till the necessity is apparent before he summons the doctor or calls at his office, and we all know how many

patients are lost in that way. The little soreness of the throat, the slight cold in the head or somewhere else, the muscular pains here and there, the patient's suspicion of "malaria," or his certainty of wind colic, no longer brings a consultation to the doctor and a prescription to the chemist as often as it did upon a time gone by. The advice of the medical man has ceased to be regarded as indispensable on all occasions, and to that extent becomes a luxury to be dispensed with, in preference to another, perhaps, if some sacrifice must be made; and if one reflects that the fee for a single professional visit or office consultation will purchase a bottle of wine, two stalls at the theatre or one at the opera, or will pay an annual subscription to a tract society if his taste inclines in that direction, the prospective patient of moderate means may well hesitate before renouncing such pleasures for a medical interview and a bottle of physic, which perhaps he may as well buy at a nominal expense from the nearest pharmacy.

In the opinion of leading pharmacists, the growing habit among physicians of directing the use of various tablets, triturates, and ready-made medicinal combinations of manufacturers of drugs, in place of complicated prescriptions to meet the indications of cases, has much favoured the tendency toward direct traffic between the patient and the apothecary without the intervention as middleman of the physician. If the patient is of that class whose income affords no margin for luxuries, and scarcely for extraordinary expenses, he waits in the face of impending sickness so long as he may, and, when compelled to seek relief, turns to charitable sources though unwilling, perhaps humiliated, and always suspicious of the value of that which has cost him nothing—his poverty, but not his will consenting.

The want of a proper adjustment of fees to the circumstances of the patient undoubtedly has inured to the pecuniary disadvantage of the physicians. The cost of medical services to people of affluence is not usually excessive; but to those depending upon a small annual stipend, and to

those, who, poorer still, are yet desirous of private medical attendance, it is, though perhaps not beyond the desert of the professional man, at least often disproportionate to the ability of the patient to pay.

Many are driven against their will to hospitals, clinics, and dispensaries, who, to the extent of their means, would prefer to pay for medical services, but who are utterly unable to meet the demands of the physicians in whom they have confidence. It is not altogether the fault of the medical man, who is, often enough, ready to conform his fee to the ability of the patient to pay; but in this country we are so heavily taxed for conscientious work—the honest worker makes us pay so tremendously for his honesty—and that which is a little cheaper than the best is so atrociously bad that, unless the doctor is expensive, he is naturally mistrusted. If, however, his casual connection with a college or hospital clinic, or whatever else it may be, has inspired some family of modest means with confidence in a young physician struggling for a practice, and who reasonably may be suspected of being moderate in his charges, he is only too often impelled to make his fee quite as large as would the most eminent of his *confrères*, lest his professional position should be underrated; and if the eminent person himself should be consulted—of course, he has his acknowledged position to maintain.

The man whose income is not more than from one hundred to one hundred and fifty dollars in the month, and whose absolutely necessary expenses leave little margin for accidents, may meet without distress the cost of casual and transient illness in his family, but is soon made bankrupt if it be more frequent or prolonged, though the physician exact no more than the minimum of established rates of compensation. The expense of even modest living has become so inordinate that the number of those out of this class who are unable to make provision for emergencies has greatly increased; they may pay physicians' bills which in the aggregate, and without reference to the amount of service

rendered, are small, but must default in the payment of those which are larger, or must resort to the aid of medical charities. This, which is a proper use of medical charity, is a specific instance in which pecuniary loss has been suffered by the medical profession from the operation of a general cause—the resort to public sources of medical relief by a large class of people, not absolutely poor, who have heretofore, under more favourable conditions of general business and of living, been able to more or less generously contribute to the income of the private physician.

The abuse of medical charity, on the other hand, is independent of such general conditions as have been considered. The fact that funds, designed by both public and private munificence for the relief of the sick poor, have been diverted to the benefit of those who are beyond the necessity of charitable assistance, seems to be well established; and is generally believed by medical men to be largely responsible for a decrease in the business of the general practitioner. It is difficult to give this opinion statistical confirmation.

The number of people treated at hospitals and dispensaries is certainly enormous, and apparently constituting an undue percentage of the entire population; but the want of uniformity in manner of constructing such reports in different institutions makes it impossible to know how far the figures given represent original patients. It is scarcely conceivable, for instance, that the 837,971 persons treated in the dispensaries of New York, as reported for the year 1895, more than half the population at that time, were so many different individuals. It would be, of course, impossible to form a numerical estimate of the proportionate number of those who are the recipients of medical charity, who should be debarred by their ability to pay for what they receive. There can be no doubt that the evil is great; the result of concurrent individual observation is competent evidence, and, making due allowance for a natural tendency to accept the most direct or apparent as the most effective

cause of obvious phenomena, it must account for an appreciable part of the sum which has been subtracted from the aggregate of medical incomes. The numerous and well-authenticated instances, cited as occurring within the personal knowledge of physicians, of persons living in luxurious apartments or otherwise known to possess abundant means, the more than decent apparel of many other patients at the same institutions, the growing habit of physicians from the country of bringing the better class of their patients to city or private charities for consultation, indicate not only pecuniary loss to the medical profession, but still more lamentable loss in self-respect in the general community. The other and extreme instances, in which dispensary patients are said to leave their carriage and servants around the near-by corner of a street, or in which a woman possessed of fortune beyond that of any other of her sex is said to have accepted medical charity, not only at a dispensary, but in the private office of its medical attendant, if true, as claimed, must be too exceptional to have more than a curious interest.

An unquestionable and flagrant abuse, not of charity but in its guise, exists in the exaction of small fees from patients in clinics and dispensaries. That such institutions of a semi-public and professedly charitable character, with all the advantages of endowment, prestige, and organisation, should enter into a competition with individual physicians in order that their already-provided-for expenses may be reduced or their facilities for teaching may be increased, is a monstrous injustice. It is a direct and naked application to the practice of medicine of the principle upon which mercantile trusts are founded. An institution which claims exemption from taxation or from damages in a suit for malpractice, on the ground that it is a charitable foundation, certainly has no business to give medical treatment at cut rates to all comers, while it sends penniless but surgically uninteresting patients to Bellevue to be cared for at the public cost.

A lying-in infirmary, founded by private beneficence for legitimate purposes of teaching, transcends its functions

when it competes with the family physician for cases at his own rates or a little less. These and similar encroachments upon private practice, stated and believed by reputable members of the profession to be well established, even though they were defensible, could not fail to diminish its aggregate emoluments.

There is danger lest the proper uses and the abuses of charity should be confounded. The hospital or dispensary patient who is comfortably clad, who is evidently of a better class than the majority, or the woman with perhaps a superfluous ribbon or some little personal adornment of which the cost might possibly have paid some doctor's fee, is not necessarily a trespasser upon the benevolence of the public, or to be directed to the private office of its representative. The clerk or small shopkeeper, or other person, who, with his family, is a person of some refinement of feeling, if not absolutely of cultivation, and accustomed to decent surroundings, ought not to be herded with laborers of the street in a squalid tenement that he may put by money for the expenses of some possible illness. He is entitled to have a proper regard for the comfort of his family, and even for appearances; and if his meagre income reaches no farther, or will not compass what he rightly or wrongly believes to be adequate medical attendance, he may claim, with right, when sickness comes to him or them, such aid as public institutions can give, and should not be stigmatised as a pauper or as a dishonest claimant of the public bounty. The sharpest pangs of poverty are not felt by the poorest, and no lives are more pathetic than those which border upon penury, though they never quite surpass its limit.

The most effective of the causes farther contributive to a decline in the business of the general practitioner are, in part, an outgrowth of the business methods which prevail at the present time, and in part due to what may be termed the complicated mechanism now employed in the treatment of disease. The growth of specialism, the multiplication of sanitariums, and the disposition of patients suffering either

from acute illness of severity or from surgical disorders, to enter public or private hospitals, which have together made serious inroads upon general practice, have each this twofold origin. There are mining, bridge, and electrical engineers; real estate, criminal, and patent lawyers; grocers who sell only tea, or perhaps butter and eggs; and butchers who are dangerous only to pigs or to chickens, as the case may be. So, too, there are trusts and monopolies which destroy the smaller traders. The subdivision of business and the limitation of the field of individual enterprise grow more and more complete from year to year, and he whom circumstance compels to row against the tide, if he survive, must drop behind.

In the medical profession, specialties and specialists increase, and the temper of the public mind approves, till little or nothing is left to general practice—even rheumatism, dyspepsia, appendicitis, and gonorrhoea have been preëmpted. The country doctor, who is at once physician, surgeon, gynaecologist, and all sorts of specialists combined, still survives to some extent, and is likely to be a man of broader mind than his *confrère*, who is potent only in some high degree of trituration.

The analogue of commercial trusts and combinations exists in the foundation of medical schools, clinics, dispensaries, and minor hospitals. Medical faculties and medical boards have not failed to recognise the value of mutual aid and coöperation in the advancement not only of their semi-public, but of their private interests. The number of these institutions, which is already in excess of public need, grows constantly larger, as men who are excluded and are emulous of their advantages form new combinations and establish for themselves new clinics and dispensaries. These references to present peculiarities and conditions of medical practice are not intended as a criticism, an expression either of approval or of condemnation, but simply in explanation to a certain extent of another fact *subjudice*. The introduction of appliances too complicated or too expensive, or requiring

too much technical skill in their use, for the casual occasions of general practice has much enlarged the field of special treatment and correspondingly restricted the work of the general practitioner. In like manner, the recognised necessity for the maintenance of surgical asepsis, and the perfection of detail, the proper environment, the employment of specially-trained surgical nurses and assistants which it involves, have compelled the surgeon to very generally remove operative cases to the hospital, and thus deprive the attending physician of the after care of his own patients. The increasing number of sanitariums established for the reception of cases of chronic disease, especially of phthisis pulmonalis and of neuroses, in accordance with present views of treatment, must in an appreciable degree detract from the income of the general practitioner to which such chronic cases largely contribute.

It has been thought that the profession suffers from an over-congestion of its ranks, and this with the undue extension of the work of medical charities has been generally regarded as the essential, if not the complete, explanation of the present unsatisfactory pecuniary returns made to so many of its members. It is probably true that the number of medical men has increased out of proportion to that of the population. The medical profession has become more attractive; its dignity has been greatly enhanced; its highest rewards have become as brilliant as those in any of the other learned professions; and educated youth has naturally entered more freely upon its study. The half-educated and uncultivated more than ever swell the enormous classes of medical schools; the natural restlessness of the masses of people in a country in which no class distinctions exist, except such as come from the possession of wealth, constantly forces into the struggle for better place those who are entirely unfitted by education and social surroundings for the positions to which they aspire and perhaps attain. This plethora of recruits is equally notable in other professions, especially in the larger cities, and is more marked in

this country than abroad, where the maxim, *Ne sutor ultra crepidam*, is more carefully observed. The several hundred applications for a naval chaplaincy, though clergymen no more than cats are fond of the sea, is evidence of a redundancy of clerical endeavour; and the New York city directory is eloquent of the amount of legal talent at the disposition of the public. It is questionable, however, how far this accession to the membership of a profession, even if apparently over-large, is really a menace to its general prosperity. If any harm has been done to the medical profession, it has been rather to the surgeons than to the physicians or general practitioners, whose case it is that has elicited sympathy and discussion. The surgeons of ability and skill—so few even in still recent years—have been disproportionately reinforced in numbers, and the changes in surgical methods have been such that the younger men have been enabled almost at once to meet their elders upon nearly equal terms. If competition has become more intense in the medical profession, it is a result of a higher and more complex civilisation, a greater density of population, and a consequent harder struggle for individual existence which must be encountered, as it is in all occupations of life and not a hardship peculiar to itself. The rivalry of charlatans and of heterodox practitioners continues, as it probably always will, but there is no apparent reason to suppose that it is more active or more successful than in the past.

Many of the causes which have been enumerated as sharing in the responsibility for a decline in the remunerative business of physicians have been operative for a considerable time. The fact itself has been patent for scarcely more than a year, or at least it has not been so notable as to provoke general discussion. Changes in social conditions are always insidious, usually unnoted till long after they are evident, and in time, often seemingly explosive. History is full of examples. In this instance, effects which had been thought to be individual experiences of only passing import were somewhat suddenly discovered to be general and possibly permanent.

In view of all these causes of decline, it may be said that the only wonder is that the general practitioner has any practice left at all; but the world is large, though doctors be many; sickness and death are the heritage of all mankind, and as a matter of fact we have not yet found our occupation gone.

The natural and fitting termination of a discussion which involves the etiology of grievances is in the indication of means for their removal; but it is easier to observe phenomena, to speculate upon their origin, and to moralise, than to suggest their remedy—as we too often find it in the study of our cases. The improvement in the health of the community is likely to be progressive, through the efforts of the profession, which has already begun to feel the pressure of the crown of martyrdom. The general commercial depression, and the consequent contraction of incomes, which has led to an economy in medical attendance among people of moderate means and even of moderate wealth, and has driven the poor to hospitals and dispensaries, is of course beyond our influence or control. Dr. Dingley of Maine has taken it in hand, and if we survive his uncommonly nasty physic, perhaps eventually we may be the better for it!

The injury which has been done to private physicians by the unwarranted methods of pseudo-medical charities is unquestionably capable of whatever relief the law can afford. It is only a minority of these institutions which offend, and out of the whole number in this city, exceeding one hundred, not more than four or five have opposed necessary legislative and executive action; such legal restrictions and supervisory provisions as are practicable have only to be framed with sufficient care and judgment, and when proposed for enactment to be supported with energy and unanimity, to make it quite possible to overcome any selfish opposition which can be made.

It is unnecessary to dwell upon this phase of the subject, which but just now has been adequately discussed by gentlemen better qualified for the task. Remedial legislation,

however, can never entirely obviate existing causes of complaint, except by a censorship so severe and a surveillance so complete as to be alike distasteful and foreign to the character of members of an honourable profession. If the managers of hospitals, dispensaries, and college clinics remain regardless of their professional obligations to their fellows, and in their eager desire to purvey "material" for the instruction of students or for their own exploitation, tout for patients and welcome those who by reason of sufficient means have no right to be accorded the privilege of the poor, no process of law can wholly restrain them. There are moral delinquencies, as there are crimes, for which no legal punishment is provided. It is a sophism to say that the public exposure to which the patient is subjected is in the nature of a remuneration, or that a medical institution has a right to proffer, or the patient to accept, a charity which is not justified by even the semblance of poverty. No body of men has the right to debauch public sentiment, or to impair the self-respect of a considerable class in the community and to pauperise those who are capable of self-support—to stimulate the growth of the very evils which, among the poorest, sociologists and philanthropists are struggling to limit by the discouragement of undeserved and indiscriminate charity. It is an injustice to society, as well as to the medical profession, for which the profession itself is in great part responsible. Its tolerance of methods which are too nearly akin to those of purely commercial pursuits, and of a loosening of the bonds of professional obligation which bind physicians to one another in honour and fraternity, has made possible the very scandal and grievance which is now the subject of discussion and complaint. It is in a return to a higher conception of professional morals, and to its enforcement upon the few by an aggressive professional sentiment, that the most complete protection to the many will be found to exist. The constant inculcation of the fraternal duty which medical men owe to each other as the panacea for all the professional ills from which they

suffer may grow wearisome; but in rehearsing the errors and grievances of a profession in which the general welfare is so peculiarly dependent upon the observance of the Golden Rule, it is difficult to avoid usurping the preacher's office.

The undue or inconvenient increase in the number of practitioners of medicine, whether or not it is to be deemed an evil, is no more to be controlled than the growing indisposition of people of moderate means to seek unnecessary medical advice. The profession cannot be surrounded with a Chinese wall; so long as it seems to offer desirable rewards, new men will enter at will, within the limit of such restrictions as may be legally prescribed, and if we are jostled, or too much crowded, we must endure it with the best grace we may. The longer course of study which is now prescribed is certainly far from prohibitive, and more exigent demands upon the time and scholarship of the student, if made hereafter, while they will elevate the character of the profession, will hardly decrease the number of its disciples. Competition grows more fierce, whether the most urgent cause may be the diminished work to be done, or the greater number who stand ready to do it; learning, sagacity, assiduity, and tact—every honourable means—are essential to honourable success. Let us be desirous of none other—let us avoid questionable methods; and if our weapons must be sharp, Heaven grant that they always may be clean! And you who find the struggle hard, who have learned that the realisation of a high conception of professional honour oftener leads to business failure than to success, who may sometimes be inclined to falter or to grow faint of heart, take to yourself the adjuration of that fine gentleman himself who never faltered, and whose heart was always brave—William Makepeace Thackeray:

“ Who misses or who wins the prize?
Go lose or conquer, as you can:
But if you fail, or if you rise,
Be each, pray God, a gentleman.”

ACUTE CATARRH OF THE MIDDLE EAR AS A SEQUEL OF LA GRIPPE.

By SAMUEL W. SMITH, M. D., of New York County.

October 12, 1897.

In presenting my paper, entitled "Otitis Media as a Complication of La Grippe," it is not my purpose to discuss the latter, but merely say in passing that la grippe has had many synonyms, and perhaps the best is the one often used by the intelligent laity, "catarrhal fever." Who does not sympathise with the Irishman, who remarked, "Sure it is the disease that makes you feel sick two weeks after you get well"?

The process of inflammation of the middle ear may result in an effusion of serum, blood, laudable pus, or purulent exudation, but the first merges into the latter by such close gradations that it is not easy to differentiate, and quite unimportant as regards treatment when the attack is severe. That the judicious physician ought to recognise and be able to treat intelligently acute inflammation of the middle ear goes without saying. That the average physician does not do so is also true. An experience of several months in the New York and Manhattan Eye and Ear Infirmary gave me the impression that there is no disease so common and so destructive to an important organ of the body that is so generally overlooked by indifference as to results and want of intelligence as to treatment. The ordinary history of deafness from this cause is that the victim of otorrhea, suffering for years, not only with the loss of hearing but with a profuse and offensive discharge from the ear, will give the shocking information that the physician who attended him at the time of his first earache, and subsequently when a

profuse and irritating discharge had set in, said, "Do nothing," or, "Syringe the ear with soap and water." So does the average physician dismiss the case, without any knowledge whatever of the pathological lesion which has taken place, entailing upon the sufferer, in many cases, life-long disease, where a judicious and timely interference would have been followed by the happiest results.

Prominent among the earliest and subjective symptoms of this trouble is a deep-seated pain, lancinating or throbbing in character, synchronous with the pulsation. Pain is increased by talking, sneezing, blowing the nose, deglutition, or any sudden expiratory act through the nostrils, etc. Walking about the room seems to give relief, and the recumbent position increases the pain. A tickling and itching sensation is experienced at the pharyngeal orifice of the Eustachian tube extending along its course to the middle ear, with dullness of hearing and tinnitus aurium in the affected ear. The pain, at first only referable to the ear, after a few hours may, and frequently does, extend to the eye, temporal region, and forehead, along the side of the head to the occipital region, over the mastoid process and down the neck. The pain now becomes intense; the pulse is accelerated; the tongue coated, with red edges. There is loss of appetite and rapid rise of temperature (101° to 103°) vertigo and delirium. What seemed a favourable termination of la grippe now assumes a serious process of inflammation.

If early in the disease the drumhead be examined with a conical ear speculum and reflected light, it will be seen to have lost its grayish hue and bright triangular spot, and red lines appear along the handle of the malleus; later on, the drumhead is no longer concave from an external view, but is convex and bulging out into the external meatus. If the disease is to terminate favourably, the occlusion of the Eustachian tube will give way and the exudative material of the tympanic cavity pass through it into the throat, or it may be that a rupture of the drumhead takes place and the contents of the middle ear pass out through the external canal.

However, not infrequently new connective tissue bands have been formed, connecting one or more of the ossicles to the walls of the tympanum, and by this seemingly favourable termination of the disease, a permanent impairment of hearing may be established. If paracentesis be performed early in the disease, and the contents of the tympanum allowed to flow out, followed by the application of two or three leeches to the base of the tragus and over the mastoid process, the disease may be cut short, and resolution take place without leaving behind one trace of the inflammatory process.

Usually, the attending physician fails to appreciate the great importance of a judicious and timely interference with the course of the disease, and thus the lamentable truth is, that about seventy-five per cent. of patients so affected lose their hearing to a greater or less extent. If the disease becomes chronic, we have to deal with a condition of things not only extremely disagreeable in character but dangerous to the life of the sufferer. Especially is this the case with a patient of a strumous diathesis or one tainted with syphilis. If the disease extends into the mastoid cells, which frequently occurs, we may have, months following the acute attack, a periostitis over the mastoid process, giving rise to the most distressing and painful symptoms, resulting in a mastoid abscess. Or the ulcerative process may attack the bony structure of the ear and establish caries of the part, which may extend to the diploe of the petrous portion of the temporal bone, and give rise to pachymeningitis or pyemia. Thrombosis frequently results, and when the diploe of the bone is the seat of ulceration, emboli may pass through the petrosal and lateral sinuses into the jugular vein, pass through the right heart, and thus give rise to metastatic abscess of the lung. The internal carotid may be attacked by the ulcerative process, followed by perforation and death.

In periostitis of the osseous portion of the external auditory canal, the points in differential diagnosis are more difficult to make out by the subjective symptoms. However,

the following points may lead to a correct diagnosis: In periostitis there is usually an itching or tingling sensation experienced along the wall of the osseous portion of the external auditory canal. In otitis media, if these symptoms are present, they are referable to the pharyngeal orifice of the Eustachian tube and travel along the tube to the middle ear. In periostitis, the pain gradually increases, while in otitis media the pain is suddenly developed; in periostitis, deafness and tinnitus aurium, if they are present, always follow the pain, while in otitis media the deafness and tinnitus aurium always accompany the pain. Again, the speculum will aid in drawing the line between these two diseases, for in periostitis the membrum tympani is rarely the seat of any special change, while in otitis media the membrum tympani is always changed in its appearance. If any doubt still exists, an exploration of the walls of the external auditory canal by means of a blunt-pointed probe and making gentle pressure in every portion of the canal, when the point of periostitis is reached, extreme pain is produced; in otitis media there is rarely any unusual tenderness at any point in the external auditory canal.

TO THE GRIP GERM.

FROM THE LONDON WORLD.

By the shivering fits which chill us,
By the feverish heats which grill us,
By the pains acute which fill us,
By the aches which maul and mill us,
By the quacks who draught and pill us,
By the hydropaths who swill us,
By the allopaths who bill us,
By the nervous fears which kill us,
Tell us, tell us, wee Bacillus,
What, and why, and whence you are!

Say, are you a germ atomic?
Have you uses economic?
Are you truly miasmatic?
Are you solid or lymphatic?

Frankly, is your cause zymotic ?
Are you native or exotic ?
When your business is transacted
Is your stay to be protracted ?
And do you intend, Bacillus,
To return again and kill us ?
Do make answer, if you please.

Tell us, briefly, tiny mystery,
What's your source and what's your history ;
Clear the clouds of obfuscation
That surround your incubation :
Furnish, without more obstruction,
Your belated introduction ;
Let us know your why and wherefore,
What it is you're in the air for.
And meanwhile, wee Bacillus,
Since with morbid dread you fill us,
Prithee, take your leave at once.

CASE I.—Mrs. R., aged forty years—otitis media,—paracentesis and cure. Was called to see this woman December 1, 1890. Patient informed me that she had suffered with a severe cold in the head for the past two or three days, and during the day of my first visit had had a severe chill. I found the patient suffering with la grippe, accompanied with a pretty sharp attack of acute bronchitis. Face flushed, skin hot and dry, a severe dry cough, racking headache, pains in chest, back, and lower extremities, with intense prostration. Temperature, 102 ; pulse, 100 ; respiration, 30. Patient did well under appropriate treatment until December 11, when I discontinued daily visits. December 13 I was summoned in the night to the bedside of my patient, and found her suffering the most intense pain in the right side of her head and ear. I prescribed an opiate and filled the ear with warm olive-oil and opium. December 14, an examination with a speculum and reflected light showed the drumhead of the affected ear bulging out into the external meatus. I came prepared and performed the simple operation of paracentesis. A discharge gushed from the ear ; the pain subsided in a few moments, and by appropriate treatment the patient made a good recovery in the course of a few days. I saw the patient several months afterwards, and an examination revealed the fact that the drumhead and other parts of the ear were in a perfectly healthy condition.

CASE II.—F. H. W., man, age thirty-seven years, bookkeeper, applied at my office for treatment, March 5, 1891. Patient complained of deafness and pain in left ear, with a slight discharge, and gave the following history :

At three years of age suffered from an abscess of affected ear, which discharged at irregular intervals for more than twenty years. At the age of twenty-seven contracted syphilis. Treatment for syphilis lasted nine months. Ear remained in a seemingly healthy condition, with the exception of deafness, until December, 1890. Following an attack of la grippe, had earache, and it began to discharge again, accompanied with more or less pain, loss of appetite, and restlessness. Examination showed the drum and small bones of the ear gone and the tympanic cavity filled with bad-smelling caseous pus. Turgescence and tenderness upon pressure over the mastoid process. Temperature, 101 ; pulse, 106, and feeble.

Treatment. I syringed the ear out with a warm bichloride solution, 1-5000, and when thoroughly dried with borated cotton applied to the middle ear cavity iodoform. Prescribed two grain doses of quinine and milk punch every four hours. Applied oleate mercury and morphine, over mastoid process night and morning. March 6, 7, 8, 9, 10, and 11, the same treatment was religiously pursued, and the patient seemed much improved ; stronger, better appetite, rested better nights, temperature, normal to $99\frac{1}{2}$. March 12, the patient felt so much better that he came to my office, and while waiting to see me was attacked with violent rigours, fever and sweating ; temperature, 104. Patient sent home and put to bed, given 15 grains of quinine and two leeches applied over mastoid process. March 13, the patient had rigours, and sweating morning and afternoon, temperature, 99 to $102\frac{1}{2}$. Ear thoroughly cleansed and iodoform applied as usual. March 14, the condition of the patient unchanged. I decided to trephine the mastoid, but the surroundings being unfavourable, I induced the patient to go to the Manhattan Eye and Ear hospital, and took him there during the afternoon of the same day.

The records of that institution show that little change took place in the general symptoms of the patient during his stay, from March 14 until March 20, and no operation was performed. March 20, patient was removed to St. Luke's hospital and the records of that institution show the following termination of the case :

“ March 20, admitted F. H. W., age thirty-seven, suffering with

pyemia and suppurative otitis media. A severe rigour during the afternoon, and temperature reached 105. March 21, patient removed to the surgical side, and, after a consultation, the visiting surgeon made an incision over the mastoid and trephined, and at the greatest depth a little pus was found, a portion of the lateral sinus exposed. Anterior to this, softened, bad-smelling necrotic bone was found and removed. After syringing out the cavity with a bichloride of mercury solution, a considerable amount of caseous matter was discharged from the external meatus. March 22, irregular temperature, 101 to 103. March 23, consolidation of apex of right lung. March 24, 25, 26, respiration, 40 to 50; pulse, 120 to 140; temperature, 101 to 103.

"March 27, symptoms of fluid in right chest, aspirated 1:30 a. m. Patient's general condition seemed improved, but during the day the patient had a distinct chill, lasting twenty minutes, and the temperature went up again to 105. March 28, breathing laboured and shallow; pulse, rapid and feeble, and at 7:30 p. m., F. H. W. died of septic pneumonia due to pyemia from otitis media."

CASE III.—T. B., age four years, otitis media, application of leeches and cure without rupture of drumhead.

Attended this case for la grippe for one week in November, 1891, when I was called in the early morning to see the little patient suffering with earache. The mother informed me that the little fellow had kept her awake all night, crying and complaining of pain in his ear. A speculum examination revealed a slight bulging of the drumhead, and signs of an inflammatory process going on inside. The patient being very nervous and irritable, I abandoned the idea of paracentesis for the time being, and instead, applied two leeches to the base of the tragus, gave a calomel and saline purge and ordered the child kept quietly in bed, lying on the side of the well ear, and warm water put in the affected one. The following day, I called to perform the operation of paracentesis, if the painful symptoms were not mitigated. I found the patient sitting up in bed, playing with his toys, and apparently free from all ear trouble. This case went on to a rapid recovery and on the third day following, when I called to see another member of the family, the little patient was about the room, playing as usual.

CASE IV.—Infant ten months, otitis media, spontaneous rupture of the drumhead. This case is the infant sister of case three.

In December last, I was called to see the case and found her suffering with la grippe, complicated with broncho-pneumonia. After three or four weeks' illness, the little patient made a fairly good recovery from the pneumonia, but was fretful and partook of its nourishment badly. A change of air was recommended and the little patient was taken to Atlantic City. The mother, who called at my office May 3, informed me that after their arrival in Atlantic City, the baby grew worse, and after crying incessantly for one whole night, the following day one of the ears began to discharge profusely. An examination revealed a perforation of the drum-head, out of which oozed a mucopurulent discharge. The edges of the perforated drumhead were touched twice a week with a strong solution of nitrate of silver and a solution of one grain of sulphate of zinc and one-fourth grain of permanganate of potash to the ounce of water was poured into the ear, lukewarm, twice a day. I saw the little patient three weeks after the treatment was commenced, and the perforation was almost closed and the discharge much lessened.

Professor Agnew, in a lecture at the College of Physicians and Surgeons on "Otitis and its Prophylactic Treatment," says, "First, then, we would say that every medical man should be able to distinguish the drumhead or membrana tympanum—not one in a hundred can. Five minutes spent daily for a week, in looking into the external auditory canal of a healthy ear, through a conical speculum, would enable one with ordinary powers of observation to avoid many of the catastrophes in treating common ear diseases."

Professor Roosa says in his work on the ear, page seventeen, "A singular apathy in regard to the maladies of one of the most important organs of the body, an inexplicable ignorance as to their results, a most irrational and empirical manner of treatment have been our heritage from the fathers. Probably to-day, in the closing years of the nineteenth century, there are more practitioners of medicine who view aural medicine and surgery from the standpoint of the errorists of the dark ages, than there are in any other field."

Professor Roosa and other distinguished scientists in articles upon this subject are of the opinion that the average physician should, and with a little attention to the

anatomy of the ear can, be prepared when called to see one of these cases in the first or second stage of the disease, by the aid of the paracentesis knife to prevent at least seventy-five per cent. of those suffering from otitis media from any impairment of hearing whatever.

Neimeyer on "Causation of Pachymeningitis Due to Thromboses of the Cerebral Sinuses," says (Vol. II, page 206), "The numerous patients suffering from tedious otorrhea as a result of otitis interia are constantly threatened as with a 'Damocles sword' by inflammation or thromboses of these sinuses."

In conclusion, permit me to say I think a large percentage of these cases of acute otitis media might be cut short or aborted by local depletion and a little active purgation if seen at the onset of the disease.

DISCUSSION.

Dr. LEROY J. BROOKS, of Chenango county, said that, although not a specialist, many of these cases came under his observation. It had been his practice to do two things, viz.: (1) As soon as symptoms and signs of otitis appeared, to Pollitzerize the child frequently—two or three times a day in some instances—and (2) to use hot saline irrigation. The hot saline solution was siphoned out of a receptacle by means of rubber tubing, and was allowed to run into the ear. If this were done repeatedly, using very hot water, it would often apparently abort the disease. Much difficulty was experienced in private general practice in resorting to the surgical puncture of the drumhead. He was confident that it not only aborted these attacks, but prevented the subsequent serious troubles.

Dr. BERNARD COHEN, of Erie county, said that his attention had first been called to these troubles during an epidemic of la grippe in 1892. His practice had been to Pollitzerize the child, using in the tube a few drops of chloroform. This seemed to assist the dilatation of the tube, and at the same time gave almost instant relief. It was objectionable to use oils of any kind in the ear, as they were liable to become rancid. If oil seemed to be demanded, we should use some hydrocarbon, like albolene, or else use glycerin. It was not nearly so serious to perform paracentesis at an

early date, and at a low point, as it was to allow these cases to run on. He was only a general practitioner, yet he did not hesitate to resort to this procedure quite early. He had found that patients with ear affections did much worse when quinine was administered. Hot water would give relief, and reduce the inflammation.

Dr. MORRIS E. DAVIS, of New York county, said that he was not anxious to pose as a specialist, but the sequelae of la grippe were so generally known and exerted a modifying influence on such a large class of diseases, that we were compelled to keep ourselves informed on these matters. It was questionable in his mind whether the syphilitic case cited in the paper should have been treated in the way described. He was not at all convinced that in this case the grip had had anything to do with the condition. In the early stage of grip, if one used a saline purge and large doses of sodium salicylate, together with hot applications to the ear, and hot gargles to relieve the accompanying throat affection, about all was done that was possible. In his hands, quinine had not acted well in the treatment of such cases.

Dr. SMITH, in closing the discussion, said that it had been his experience that the Pollitzer air-bag caused much pain. He had, however, obtained the most happy results by the application of leeches, and by the use of the hot water instilled into the ear with a dropping glass. When the Eustachian tube became so occluded that the discharge was pent up and the drum forced outward, it did seem necessary to perform paracentesis in order to avoid a rupture of the drumhead. With regard to the use of quinine, he would say, that the patient, F. W. —, had had syphilis. He had given him quinine because he was apparently getting up a pyemia. Early trephining over the mastoid was advised. He felt sure that if any physician having an occluded Eustachian tube would use the Pollitzer air-bag upon himself, he would not be inclined to use it on any one else.

MEDICAL EXPERT TESTIMONY.

By H. O. JEWETT, M. D., of Cortland County.

Read by title, October 12, 1897.

If there is anything entitled to the appellation of *opprobrium medicosum* it is expert testimony as it is procured and manipulated by certain members of the bar, too often aided and abetted by medical men of easy virtue, fair attainments, and more or less local professional reputation.

No wonder it has been facetiously, if not truthfully, asserted that the main purpose of expert testimony is to confound the jury, confuse the court, and pervert the ends of justice.

Doctors who are ambitious to pose as experts and secure the emoluments thereof, sometimes linger about law offices, courting favourable attention and awaiting demands for their services, like vultures hovering over a prospective battle-field waiting for the spoils. Such doctors, incited by the promise of liberal fees, and flattered by the attentions and blandishments of the men of law, will condescend to search authorities, look up points and precedents, and advance suggestions to assist unscrupulous counsel in achieving a victory entirely irrespective of the merits or demerits of their causes. Yea! such have been known to boast of the ample fees received and the popularity they had gained as experts, by aiding attorneys to win their cases in the face of truth, law, and equity. Money is tempting, even to a doctor; flattery is always potent, and prejudices are easily, sometimes unwittingly, imbibed by intimate association and familiar converse with an intriguing and interested party, either a party in a suit or his attorney.

An astute lawyer is usually quick to recognise and utilise a pliant witness who will accept the price, submit to his coaching, enlist his own sympathies, and condescend to testify, directly or indirectly, in support of any theory which the lawyer sees fit to advance.

Of course, the witness feels naturally averse to the admission of anything that will militate against the side he has espoused, resorting to evasion and equivocation where he dare not positively affirm or deny. He is cajoled, or badgered and brow-beaten by counsel whenever he attempts to tell an unwelcome truth. And it is only by catch questions from opposing counsel that he is induced to divulge any facts prejudicial to the cause of his employer who has selected him and guaranteed the bonus for his services, thus acting the part of hireling or co-advocate, instead of the impartial witness which he is sworn to be.

Says a writer in the "*Journal of the American Medical Association*," "Even when medical witnesses would fain confine themselves to facts and well-established truths, they are grouped upon opposite sides of a disputed case involving questions of science. The lawyers, acting as generals, lead the experts up to conflict, enthused with the idea that truth is the great object of the struggle, whereas neither party cares a fig for the truth, the winning of their case being paramount to all other considerations. The experts are seductively induced to make positive statements, then driven to qualify, retract, or contradict them; and are finally pressed to perjury, or so near to it as to render it impossible to draw the line of distinction."

Thus a witness is led into a jumbled, confused mass of half truths and palpable falsehoods, and is not permitted to give a clear, straightforward, common-sense view of the meaning of a stated fact in its scientific sense, while the attorneys play at shuttle-cock with each other, under the impression that they are achieving fame by their display of wit and eloquence.

Such unseemly exhibitions in a court of justice may

"tickle the ears of the groundlings," who will amuse themselves with the ludicrous display at the expense of the dignity of the court, if not of the wordy counsel whose forensic outpourings only tend to make confusion worse confounded. And, as Shakespeare has it, "The unskilful may laugh while the judicious grieve."

But all this, while it may tend to disturb the equanimity of the court, cannot fail to befog an intelligent jury, who are unable to cope with the conglomeration of conflicting testimony, or to sift the true from the spurious.

It may be exceedingly difficult for the ordinary witness to guard himself against the temptations and insidious approaches of scheming advocates of one side or the other, who are labouring to enlist his prejudices in their behalf.

It is true that an adroit cross-examination by opposing counsel will accomplish much in exposing the perfidy of a party witness, who finds himself belittled and derided at last by both parties in the issue. Albeit, the discomfiture of the unfortunate witness will not atone for his self-abasement, or wipe away the stain upon his noble calling. But the cross-examination, together with the rebutting testimony, not infrequently carries the offense to the opposite extreme with the same disregard of the principles of law and equity, thus casting additional reproach upon a time-honoured profession.

This unhappy condition of affairs, especially in capital trials, is a serious menace to the safety and welfare of society, as well as to the rights of a prisoner, who is at least "entitled to the benefit of doubts," and who may have a just claim to life or liberty.

Nor is a portion of the fraternity, with some medical prints, entirely free from responsibility in this matter. In nearly all contested cases, text-books representing the researches, observations, and conclusions of individual writers are appealed to. Many of these abound in statements which, by a little manipulation, are construed to prove or disprove almost any theory, however rational or absurd.

As a rule, books reflect the peculiar sentiments of their authors. Whatever

“Guides the author’s pen,
Books as affected are as men.”

Take up some standard work on Medical Jurisprudence, and you find unverified cases and impossible precedents recorded, the mere mention of which is as a blot upon the pages of a scientific work. These things are caught upon, paraded in court by attorneys and accepted by the average layman as important evidence, while to the professional mind they are mere bagatelles—not worth the breath expended in pronouncing them, except as they serve the purpose of the pettifogger.

It is not surprising that some medico-legal authorities, as well as much of the medical literature of the day, are declared “mere fogbanks of paid opinions, illy digested reports, and crude theories, well calculated to mislead and bewilder the honest searcher after truth.”

Much of the discrepancy on the witness stand originates from the fact, before alluded to, that the experts are employed and paid by the parties who insist upon a shaping and colouring of the testimony to meet their respective demands.

Says Dr. Holmes: “While the law requires the witness to ‘tell the truth, the whole truth, and nothing but the truth,’ it is the policy of the attorney to get, not the whole truth, but just that portion of the truth which will favour his own side of the case—and, alas! it is sometimes the policy of the witness to supply just the commodity for which he is paid.”

If it be true, in a certain sense, that every subject has two sides, it is not wonderful that men honestly disagree, especially upon theoretical points.

But it is, indeed, a sad spectacle in a court of justice, where men of eminence, learning, and respectability are pitted against each other, like pugilists in the ring, upon

questions of science and of facts, many of which are patent to the ordinary mind—an event of too frequent occurrence to be questioned or ignored.

I may be pardoned for introducing here a few sentences from Dr. Williams, in *North American Review*. He says: “Under existing conditions, expert testimony in criminal trials is to be regarded as either a farce or a tragedy. The expert presents the humiliating spectacle of the alleged scientist turned advocate and trickster for hire—hides his true opinions behind equivocal or evasive answers for a consideration—appears as a partisan and expresses by implication what he does not believe in, that he may earn his fee—thus sacrificing science at the shrine of Mammon.

“At all events, he is openly accused of all this, is railed at, scoffed at, jeered, and is placed in a position where he cannot defend himself against the charge. Being judged by the company he is in, not always the best, he suffers the fate of poor Tray. The attempt to utilise the knowledge of experts for the common weal has culminated in a total failure—has passed into a joke, and by common consent the joke has gone far enough.”

I would not, by any means, be understood to include in my strictures those noble representatives of our profession, whose wide reputation, superior attainments, and high moral status place them above suspicion.

But not all men are endowed by nature with those better and sterner qualities which enable them to resist the stress of money against principle, or to repel the machinations of scheming attorneys. It is only great minds with strong moral natures that are proof against fraud or bribery.

It is no part of the purpose of this paper to define the duties of the medical expert upon the stand, already better understood than practised; or to dwell upon the multiform difficulties that now environ his position. It would seem that some enactment should be secured vesting the appointment of experts in some authority entirely removed from the influence of parties in an issue.

But I have aimed to confine my remarks to the naked facts as they are generally recognised, leaving it for others to discuss the causes and propose proper remedies for the existing evils under the present plan of intrusting the selection and employment of experts to interested and often unscrupulous attorneys.

The worthy president of the Association, in his excellent address delivered at the meeting and published in the Transactions of last year, has treated this subject more at length and much more ably than I could hope to do at this time.

WHAT MUST WE DO TO BE SAVED?—BEING AN
INQUIRY INTO, AND A BRIEF SUMMARY OF,
THE CAUSES LEADING TO THE HOSPI-
TAL AND DISPENSARY ABUSE OF
MEDICAL CHARITY.

By THOMAS J. HILLIS, M. D., of New York County.

October 12, 1897.

There is really, after all, nothing very startling in the title of this paper. It simply means that the profession, of which we are a part, is threatened on all sides and beset by many dangers. It will be my object to-day to point out some of these dangers, and leave the task of applying a remedy for another time, since the few minutes allotted me here can only admit of a cursory glance at this wide field.

The medical press throughout the country teems with articles on hospital and dispensary abuse, and a wail of distress is heard, from one end of the land to the other, from the rank and file of our profession. They say, amongst the causes for this distress and discontent, the abuse of charity, in hospital and dispensary, is that these institutions have broken faith with the profession which created them and made their existence possible; that if the abuses are allowed to continue, in a short time a practitioner of medicine will be a rare curiosity outside of a hospital or dispensary; that a profession more ancient than the Golden Fleece or Roman Eagle, and endowed with attributes of mercy and honour, will perish from the earth, leaving only the hot-house plants, the Clinic and Maternity Home, founded, fostered, and nourished by a millionaire, whose memory is not savoury by reason of the dollars wrung from honest toil.

Before proceeding any farther, it might be well to inquire into the truth or falsity of these charges so boldly advanced

by the profession against hospital and dispensary. These concerns are only dealing with conditions that present themselves continually. These conditions are effects, not causes. These effects will be traced to their sources. It will be the purpose of this paper to point out these sources, and fasten the responsibility where it belongs. Then there are causes for this hospital and dispensary abuse, and all the abuses pointed out by the physician in his calendar of persecution and oppression. These causes will be considered, and in the classification of causation the physician himself will have the honour or dishonour of holding high place or being first cause.

This paper will trace an ambitious, unscrupulous young physician, from the moment he leaves the class-room to hang out his sign proclaiming to the world his calling, and inviting that world's approbation and patronage, through years of toil and intrigue, through the ups and downs of a busy, ceaseless activity. It will watch him in his dealings with others, particularly his brother practitioners. It will see if he observes the Golden Rule, "Do unto others as you would like to be done by," and if the word brother has any meaning as applied by physicians to each other, or whether it is not hollow and delusive.

By following this physician through the mazes and perplexities, the labyrinths and subterraneous channels in which a professional life will run for the first fifteen years of its career, we will not have much trouble in discovering the principal source from which the river of hospital and dispensary abuse has sprung, namely, the physician himself. Though ages have rolled away since the inspired words were uttered, they still ring through the universe, at once a command, a warning, and a benediction,—“Physician, heal thyself.”

HIS JOURNEY IN PURSUIT OF SUCCESS.

The young physician, after receiving his diploma, and with the benediction of his *alma mater* ringing in his ears, starts out into the active practice of his profession. He will not tarry in Jericho until his beard has grown, or immure himself in his cloister until

the ink is dry on his diploma. He is charged with medical energy as a balloon is with vapour, or a battery with electric force, and as the exponent of the gospel of healing he sallies forth, a veritable Don Quixote, to heal the sick and bind up the wounds of the injured, though the practical knowledge to properly apply his methods is as crude and visionary and as barren of results as was that of the redoubtable knight to regenerate and reorganise society. He refused to listen to an old physician, full of knowledge and ripe in years, waving him off with a grandiloquent motion of his hand when he offered to point him the way, on that memorable morning, as he started out on his professional career. This stripping out of school, now turning himself loose on society, refused to hear the advice of a sage.

LORD OF HIMSELF, A HERITAGE OF WOE.

After some effort, he finds a desirable neighbourhood in which to locate, and, after further effort, he secures an appointment on the staff of a free dispensary. He joins a medical society, and often the church in the neighbourhood he has now honoured as a resident.

The dispensary, while giving him experience which he sadly needs, occasionally supplies a patient, whom he can corral to his office by a little deception, quiet entreaty, and tact. In the church, he can get at close range to the pastor, and to know the pastor well has a special significance for him, to which assertion many successful physicians can attest. The medical society aids, too, by imparting dignity and stability, and, further, it lifts him high above the quack and other venders of medical wares.

Having now secured these three objects so dear to his heart, he has a further ambition. He wishes to become a lecturer, with the ultimate object of blossoming out into a professor, so he hires the lyceum attached to the Sunday-school, for a course of lectures on longevity and hygiene, under the auspices of the pastor and board of trustees of the church. To be honest in the matter, he cares not a rap about the longevity or hygiene of this particular neighbourhood; it would be to his interest were the sanitary conditions to remain bad, and disease, endemic and epidemic, to spread its wings over the people. Unfortunately, he only wishes to exploit himself, and under cover of a lecture, the subject of which he knows little or nothing, to advertise himself among what may now be called his new constituency. His lecture is commonplace, and abounds in catchwords and well-worn phrases, but as the admis-

sion is free, it is heard by the people, who are attracted more by curiosity than a thirst for knowledge.

In that town where Dr. Youngblood located, there were four other physicians, but it will be observed he did not visit any of them for counsel or advice on such a momentous undertaking as locating and making a start in the practice of his profession. He did, however, visit a livery stable keeper and a druggist and the superintendent of a patent medicine plant. The livery man thought there was an opening for a bright young man, especially if he could afford to drive,—it would impress his personality the more. The druggist was sure there was an opening, as none of the other four doctors in the town was very well liked, but he asked the physician, as a special favour, to keep that to himself, as he would not for the world have his name mentioned or in any way mixed up in the matter, since he was only helping a clever young man to make his way in the world. The superintendent of the patent medicine plant was certain there was room for another physician, and success was already assured if he would only push certain new remedies that his firm was now placing on the market. His signature and photograph would be of great value to them; besides, it would advertise him; it would be a ready avenue to the public ear, and perhaps to the people's heart.

While he was talking to the superintendent, a gentleman stood by, who later said: "The doctors are sleepy in this village; we want a live man, who could easily make a fortune in a very few years." He did not, however, say that he himself was a bankrupt, who defaulted on his obligations, and who was now a fugitive from the vengeance of his creditors.

While talking to the postmaster, Dr. Youngblood fell in with a new acquaintance, who welcomed him to town, spoke highly of his lecture at the lyceum, which he declared he heard with great pleasure; in fact, his wife and oldest daughter were delighted with it, and wished particularly to know when he would deliver his next lecture. In their opinion, the last was a masterpiece, plain, forceful, and convincing. He also made mention of the several patients he had sent to him for treatment, as the diagnosis of their cases by the other physicians in the town was doubtful and treatment very unsatisfactory. He added: "We are sadly in need of young blood in this town of ours, and, doctor, what a singular coincidence your name is Youngblood, too; indeed, how peculiar, a dead streak of luck for you, I assure you."

Dr. Youngblood knew later, but was not now aware, that he was

talking to a dead beat, who fleeced the other four physicians in town for professional services rendered, and he found this gentlemanly means of paying them for the same.

Now Dr. Youngblood felt naturally proud for this mark of respect from his new townsman, also for the kindness he showed him in recommending his friends to his professional care, and invited him to call at his office to see him socially, and if ever the occasion arose requiring his professional attention, it would be rendered gladly and with good-will.

This young disciple of Aesculapius, now on the high road to success, did not send any of his professional brothers an invitation to his lectures at the lyceum, but it was observed that one or two bald-headed gentlemen sat in an inconspicuous corner of the lecture hall, when a young lady nudged her escort, exclaiming, "Why, I declare, there is Dr. White, and our old physician, Dr. Black, taking notes of the lecture!" Sure enough, these gentlemen were there, to hear what new facts this new physician could impart regarding longevity and hygiene. As before related, they were not invited, or consulted in any manner in relation to the lecture or its management; in fact, so far, the young lecturer has not seen fit to even ascertain the names of his brother practitioners in the town. He has, however, a well-defined and definite knowledge that they exist; he heard certain names echoing through some sick-rooms, where he was called professionally, but these names burned deep into his heart, as they were mentioned with affection and respect, and he made a mental resolution that he would never rest or be satisfied until he had downed these patriarchs, whom he regarded as old fogies and only a stumbling-block in the road of progress; indeed, a direct hindrance to the new medical dispensation.

Now Dr. Youngblood cared not a mill for the etiquette of his profession, it had no concern for him; at present he is only interested in himself, and must, and will, build up his practice, even though the heavens fall, and the earth tremble under his feet. Now to accomplish his purpose, he will break down all the barriers that have hedged in the traditions of an ancient and honourable calling. He flings etiquette out of the window; later on, after he acquires success, he may amuse himself by observing this etiquette, and, perhaps, if pressed hard, might accept the presidency of a medical society; at present, however, he is too busy to bother himself with such toys.

In the evening, the young physician is consulted by a lady, who

has contracted a severe cold which she cannot shake off. She has a cough mixture prescribed by Dr. Goodman six months previous; it helped her then, it has failed now. She did intend to see Dr. Goodman again; he had been the physician of her family for twenty years, led a blameless life, and was respected by all, but a gentleman of her acquaintance persuaded her to consult Dr. Youngblood, who spoke about a serum in his lecture at the lyceum on Monday night, that if this serum was injected under the skin, it would quickly destroy the bacilli which were playing tag and having a jollification in the blood current.

"You said at the lyceum lecture, that you saw, through your powerful microscope, these little bacilli playing croquet in the lung tissue, and having a lawn party on the apex of the right lung of one affected with tuberculosis. These were dreadful things to see, doctor, and if told by any other physician in the town, we would say he was afflicted with nightmare, but you, coming fresh from a great college, carry the latest, the very latest, information, and tell it with an eloquent simplicity that cannot fail to gain for you respect and popularity."

Dr. Youngblood, charmed by the candour and good-will of this lady, explained that after these pestiferous creatures were driven out, the lung would resume its normal function, and the cough cease at once. He makes an artful, but superficial examination, discovers the bacilli lurking within, but does not communicate this fact to the young lady in words, but his look is fraught with direful forebodings, which he tries to hide by that professional smile, that may mean much or nothing, and so well known to us all. He gives an injection of his tuberculin, he says another and still another may be necessary, and, occasionally, the little pests are so well fortified within the house of clay that they cannot be dislodged; however, he is sure that such will not apply to her case, as she has taken it in time, but, as a matter of routine and precautionary measure, he gives her a sedative, and enjoins she should take a cathartic pill every night and avoid drafts, and dismissed her, after requesting her presence again in two days, for further consultation and instruction.

At the appointed time, she returned with her mother, who thanks the young physician for his successful treatment of her daughter's case. The cough is much less frequent, and by no means as hard as it was. "Dr. Youngblood," said the patient, "I believe your serum has accomplished its purpose, and brought death to the miscreants that were gnawing at my vitals; I am

happy now, and feel a load off my heart, and regard you as my benefactor."

"Doctor," said the young lady's mother, as she was about to retire with her daughter, "my son was at the Liberal club on Saturday night, while you gave an exhibition of those wonderful and mysterious X-rays, and told so graphically, so lucidly, how you located the bullet in a veteran's heart, which he received while protecting his country's honour, and subduing strikers and riot. As it happened, doctor, he was a colonel in the National Guard of my own native state, Pennsylvania, as you so graphically and pathetically described, carrying his wound for twenty long years,—how he suffered, and the great skill and surgical tact you displayed in locating and removing the cause of his trouble. My son further told how you said you removed a dreadful cancer, by a method new and peculiarly your own, from the walls of the stomach of a lady from India, who came the long journey to have the benefit of the best talent, as the physicians of the Orient had regarded her case as altogether a hopeless one."

Said the lady with emphasis, mingled with pride, "My son is an observing young man; he related this story at the whist party we had at our house last night. His father is thinking seriously of making him a physician, and said you would be an excellent preceptor. Before I go, Dr. Youngblood, let me assure you of my goodwill, and you can count in future on the patronage of my family, and every friend of mine I am able to influence. To be sure, Dr. Goodman has been our medical adviser for twenty or more years. We have esteemed him highly. His successes are entwined in the memory of our house, and his failures we have regarded as the visitation of heaven, but I declare, doctor, you have captured us completely; my daughter here is in ecstasy over your treatment of her own case."

The young physician's vanity is tickled, and he is justly proud of his success. He tries to hide this pride from Dr. Black, who has not the pleasure of his acquaintance, as he has not been out much, because of repeated attacks from his old enemy, the gout, but he has heard remarks dropped here and there about the lyceum lecturer, but as might be expected, from his age and experience, refrained from criticising the young physician, whose success under legitimate conditions he would be inclined to consider with a kindly feeling, though, it leaked out, he did not have a very exalted opinion of the subject matter of the lyceum lectures, or for that matter, of the lecturer himself either.

A CONSULTATION BETWEEN PHYSICIANS.

Now it happened in this wise : Dr. Black was in attendance on a child sick with a dangerous disease ; the case presented grave features ; Dr. Black, while retaining the confidence of the family, requested a consultation, and modestly left it to themselves to choose who the consultant would be.

On entering the sick-room at 10 o'clock the next morning, though the hour for consultation was set for 10:15, he was surprised to have the pleasure of meeting Dr. Youngblood, who, at the last moment, was summoned over the head of old Dr. White, whom Dr. Black was so sure of meeting in the house of Mrs. Goodyear. After exchanging greetings, Dr. Youngblood said, "Pardon me, Dr. Black, I came a few minutes before the appointed time, thinking you might be here a little earlier yourself ; as I am an exceedingly busy man, I must utilise every spare moment of my time." His real reason, however, for coming early was to make an examination on his own account, unhampered by the eye of Dr. Black, and to give and receive some suggestions from the family, in order to more thoroughly familiarise himself with the case, and, if possible, surprise and nonplus Dr. Black at his skill and aptness in diagnosis.

After surveying the room with a pompous air, he asks to see the observation chart, and directs his attention to the nurse, rather than to the physician, but, as a matter of fact, he has seen this chart on the sly before, when he sent the nurse, as a pretext, to communicate some fact to the family, who are in an inner room. He wants to know all about the temperature-curve, and the pulse-wave ; now affecting an air of superiority, and measuring the sick-room with an insolent stride.

Dr. Black, while a careful observer, does not lay quite so much stress on the variations of these waves and curves ; he, however, recognises that the pulse is rapid, and the temperature high, but as the alimentary tract is clear from obstruction, and the head comparatively cool, he prefers to direct his attention to the heart and stomach, rather than to the temperature. He tells Dr. Youngblood temperature in a child has not such serious import as in those of more mature years ; that to strengthen the heart-beat, and have the stomach tolerant of food, has always been his first and most important duty. "My professor at college, in whom I have the most implicit confidence," said Dr. Youngblood, "laid great stress on temperature in a child ; he declared it first acted

on the nerve centres, second on the reflexes, which he said were very impressionable and sensitive at this early period of life, and was apt to develop spasm, which so contracted the respiratory group of muscles that it interfered with the return circulation, and was sure to produce cerebral congestion—a grave complication, in one suffering from any form of disease.”

The gentlemen are agreed on the nature of the disease, but in prognosis and treatment stand wide apart. Dr. Black, while recognising the gravity of the case, is not absolutely hopeless of the final result; however, since Dr. Youngblood is certain of a favourable termination, if his line of treatment is adopted, there is no other course open to Dr. Black but to retire from the case, which he does.

This resolution was made by Dr. Black while adjusting his overshoes in an anteroom, after hearing Dr. Youngblood again, on the sly, though spoken in a low whisper, express a desire to be alone in the case, to the father of the child, who was waiting anxiously at the door of the consultation room, to hear if the physicians had any good news to convey concerning the outcome of the disease. It will be granted, Dr. Black's ears were not slow to hear, even if his joints are stiff and he carries a weight of seventy years on his shoulders.

The two physicians part with a cool and quiet reserve, but they do not part as friends,—a thing not observed by the family, who are worried and buried in grief, and who would be almost inconsolable were it not for the ray of hope kindled in their hearts, and bright light reflected on their path by the favourable prognosis and kind words of Dr. Youngblood.

Dr. Youngblood, now alone in the case, is heroic in his treatment. He blisters, purges, applies the cold pack and ice-bags to the head; he examines the coal-tar series, and gives full doses of the very latest antipyretic, also an analgesic and a cerebral sedative, for he has a fear of the reflexes. He, however, only succeeds in robbing the child of the little strength it possessed under Dr. Black's fostering care, for he hourly grows weaker.

Next day, Dr. Youngblood looked wise and serious; he did not wish the family to understand that he was criticising the methods of Dr. Black, who so recently had charge of the case, and in whom they were wont to place such confidence; no, nothing of that kind; oh, no, indeed! but he was extremely sorry he did not have an opportunity to see the child one day earlier, just one day earlier. At present, the system is wasted and exhausted, and cannot re-

spond to his new and powerful remedies; even electricity, strychnia, or nitroglycerin is useless now; however, he will try oxygen; it will relieve the paroxysms, and make his last hours tranquil and composed.

Next day all was still; only the lamentations of a distressed and sorrowing mother, who, between her sobs, told a lady acquaintance who came to offer her such consolation as was in her power: "Just think, Mrs. Green, my darling could have been saved if we had called Dr. Youngblood earlier; just one day earlier!" "Earlier; just one day earlier!" was wafted out upon the darkness, and the refrain taken up by the hills and echoed through the vale—"Earlier; just one day earlier!" on that memorable summer night when Mrs. Goodyear fell fainting into the arms of her sympathetic friend, Mrs. Green.

While the family are making preparations for the funeral, Dr. Youngblood and Dr. Black meet again; it is only a coincidence, and not expected by either gentleman. The object of their visit was different, as was their prognosis and treatment of the now dead child. Dr. Youngblood came for the purpose of being seen, and to advertise himself again. This occasion presented an excellent opportunity, and he was not the man to let an opportunity slip; the fact that he was only acquainted with this family three days counted for nothing with him; he was sure of a warm reception. They would be grateful for the gallant fight and final effort he made to save their loved one.

Dr. Black came in obedience to the humane impulses that found a home in his breast, and a ready outlet in his kindly nature, to offer his sympathies to the family he knew so well for twenty-five years.

Dr. Black withdrew, but Dr. Youngblood, who is now a conspicuous figure in the house of mourning, remained and chatted with the pastor, who himself was a physician, but abandoned that profession for a holier, if not a less labourious, calling. A theological student was also present, who, feeling himself too much of a sinner to enter Holy Orders, asked advice of Dr. Youngblood, and permission to be accounted as his student and for the honour of calling him preceptor. The divinity student was fearful that there might not be room for another physician in the already-crowded ranks of the profession; but Dr. Youngblood allayed his apprehension by assuring him that there was plenty of room at the top for the higher order of talent,—a quality he was sure he possessed, and hoped it would not be long after his graduation,

when he might, perhaps, climb to the high altitude he himself occupied in his profession and in the public eye. Dr. Youngblood talked on various topics, when finally the conversation turned on the practice of medicine, and the pastor and physician engaged in an animated, if not learned, debate about disease germs in general and micro-organisms in particular; their habits, haunts, and influence on the animal economy. Dr. Youngblood declared all diseases sprang from the same source or cause, namely, derangement of adjustment and co-ordination in the vital mechanism. Dr. Youngblood gave it as his opinion that at some time in the future, a period he thought not remote, the aetiology of disease would be thoroughly mastered, and the catalogue of causation, from measles to cerebro-spinal meningitis, be an open book; when a clear, bright light would then illuminate the whole domain of medicine, and he hailed with acclamation the opening of this new day. The problem of the future, he said, would be, not to cure, but to prevent, disease; when the old adage, that an ounce of prevention is worth a pound of cure, would have a definite, if not a new, meaning. He continues: "The discoveries lately made, and the new remedies introduced, are passing through a trying ordeal, as have all discoveries and inventions that have gone before, receiving, as it were, their baptism of fire; when," he had no doubt, "they would emerge with a smile from the ordeal of flame." The microscope, the chemical equation, and the X-rays were leading the vanguard in this era of wonders, and pointing the way to boundless possibilities in the realm of human thought and achievements.

"Dr. Youngblood," said the clergyman, "you astonish me with your familiarity with scientific subjects. I can only say I am overcome with the magnitude of the situation, and recognise we are living in a grand and progressive age." After taking a full breath, the clergyman continued: "Dr. Youngblood, if I understand this new gospel which you have with so much eloquence propounded, the various diseases are but the preponderance of one colony of parasites over another; that the leucocytes—always present in the blood—must be ever on the vigil and always prepared to give battle, in order to save the body intact from the ravages of these all-devouring hordes. The leucocytes, then, are at once the scavengers and the guardians of the public health. The blood is the battle-field, and life or death the resultant of these contending forces. Did not the Holy Scripture point out and demonstrate this fact long ago, when it declared, 'The blood is the life'?"

This discourse is heard by many mourners, who came from distant parts to pay their respects to the living and honour the dead. The pastor will be known for his learning, as well as piety, and Dr. Youngblood's fame for scholarship, as well as rare skill in his profession, will be spread far and wide.

Dr. Black, who only retired to an adjacent room to console the bereaved parents, was an unwilling auditor of this ill-timed discussion. Later, on the porch, on his way home, he was approached by the divinity student, who asked the doctor for his opinion as to the relative merits of the discussion between his pastor, Rev. Mr. Mayflower, and Dr. Youngblood, his new preceptor. The old physician drew himself up to his full height, and said: "Sir, this occasion is too sad, and the time inopportune to answer questions that do not immediately concern the welfare of this afflicted family. I refrain, sir, to comment on the egotism and bad taste of the gentleman who opened the discussion, or on the gentleman who closed it, for his lack of moral perception and thoughtlessness in desecrating the attributes of his sacred calling."

Three men were conspicuous figures in a large room, where the town 'Squire held court, one cold winter morning in December. There were some whisperings going around of a young woman and an ante-mortem statement; however, the facts were not clear, and according to some young lady friends of Dr. Youngblood, it was an outrage to associate his name in any manner with the case. Those three men were Dr. Youngblood, his student, Mr. Hopewell, now Dr. Hopewell, and a young man, an accessory to the act, now the central figure in what is very likely to end in a tragedy. This young man took stealthy but furtive glances at the ancient squire, while his restless little eyes roamed around the court room, always to fall when they lit on a little, old woman in black in a remote corner of the room. She was the mother of the dying girl. There was Rev. Dr. Mayflower, reinforced by two deacons and a trustee, a contractor,—all came to attest to Dr. Youngblood's piety and personal worth, and the utter impossibility of either this devout Christian, or his talented student, Dr. Hopewell, being guilty of a crime. They came, if necessary, to give bail in any amount, to save these gentlemen the ignominy of entering a cell, or spending a night in the lock-up.

DR. YOUNGBLOOD IN JAIL.

Dr. Youngblood in jail was not wanting in sympathy from without. The sewing girls from the attics left their offerings of golden-rod and wild daisies at the jailer's lodge, and the more affluent ladies of his now numerous acquaintance, brought pressure in the shape of a dollar on the jailer's palm, and were thus able to present Dr. Youngblood personally with an offering of American Beauty roses, and some of his more enthusiastic lady admirers insisted on pinning a chrysanthemum on his bosom; some others entwined delicate leaves of smilax in his buttonhole.

A lawyer from Philadelphia, Mr. Sharp, laughed heartily in his office while reading, when he declared the indictment was full of legal blow-holes, that it was woven so clumsily and its texture so loose, that a flock of wild turkeys could fly through the apertures or interstices it presented.

It appears that it occurred in this way. The district attorney's assistant, who was a physician before he read law and entered the service of the state, was not skilled in drawing up indictments for the criminal calendar. Dr. Youngblood escaped through a technicality. He pleaded not guilty, but a flaw in the indictment was the thunderbolt, and Mr. Sharp, the Ajax who hurled it at the prosecution, though Deacon Primrose, when shaking Dr. Youngblood by the hand, exclaimed, "It was through the interposition of heaven."

THE FOUNDING OF A NEW DISPENSARY TO COMMEMORATE DR.
YOUNGBLOOD'S ESCAPE FROM JAIL.

Now it was said with one voice by the good people of Dr. Youngblood's acquaintance, and Rev. Mr. Mayflower's congregation, that Dr. Youngblood must have a justification, so they set about at once, raising a fund to found another dispensary. A well-to-do old lady, an ex-president of the society of King's Daughters, said she would donate sufficient to build an amphitheatre, that it should be known as the Youngblood Operating room of the Free To All dispensary.

Dr. Youngblood, smarting under the disgrace of his late sojourn in jail, almost refused to be comforted, and was quick to discern who were instrumental in this effort to cover him with disgrace. His heart yearned for revenge, as the names of Drs. Goodman, White, and Black flitted through his brain. He only would accept the honour of being surgeon-in-chief to this new charity, condi-

tionally, and that condition was, that the dispensary should be free to all, as its name implied. "Yes!" he exclaimed, "as free as salvation or the air we breathe." He said he was aware that some physicians in the town would prefer that a discrimination should be made, and those able to pay for treatment turned from the door, but such physicians only wanted to draw water to their own mills, that their designs should be frustrated, by making the dispensary a Free To All; as this was a free country, it should be free in fact as well as in name.

Dr. Youngblood was so determined in this resolution, that he aroused some opposition in his friends, but it died away after he quoted the lines from a well-known author,

Come one, come all, this rock shall fly
From its firm basis, soon as I.

It was only a matter of minor importance to Dr. Youngblood when the Free To All dispensary was sued for malpractice, but the suits were dismissed by Judge Youngman on the ground that the dispensary was a charitable institution, and not responsible for the bungling of its surgeons.

The lawyer for the plaintiff, now a helpless cripple, because Dr. Youngblood's assistant, Dr. Hopewell, mistook a fracture at the hip joint for rheumatism, could not agree with the learned judge; he thought every tub should sit on its own bottom, and that the dispensary should not hide its surgeons under the petticoats of charity, in order to escape an obligation and responsibility for which a private physician would have to defend himself before a jury of his peers. It appeared the old gentleman, now a cripple, was on a free excursion (though it was said he had money in bank), and while promenading the deck of the excursion steamer, slipped on an orange peel, breaking the bones of his left forearm. Next day, at the Free To All dispensary, where he was carried, Dr. Hopewell said it was a sprain, and, as the old man was suffering from the rheumatics, Dr. Youngblood paid no attention, when the patient said he could not raise his right leg, and that he had a severe pain in the region of his groin.

The physicians' incomes were gradually shrinking, as the town was constantly growing poorer, and the people flocking to the Free To All Memorial dispensary. Dr. Youngblood did not mind this, as he had received a windfall from the old lady who founded the Youngblood Operating room, now just deceased, for his skill in

treatment and fidelity in watching over her during the last hours of a well-spent life.

It will be noted, the town grew so poor, that another work-house had to be built, and a wing added to the jail, and the county again saddled with a load of debt, as people were hungry and homeless, sullen, and in a fighting mood. Now this privation and distress was not brought about through pestilence or famine, or any cataclysm, or vicissitude of fate or fortune. It was the direct result and logical sequence of the teachings of three men in the village. These men were Rev. Jonathan Mayflower, an editor with a past named Broadcast, who led a roving life until he settled in the village and embraced religion at a street gathering of the Salvation Army; and a Mr. Redflame, an anarchist, who was converted at a prayer-meeting in Dr. Mayflower's church, and who, since his conversion, would prefer to be known as a Socialist. These three men, with the able assistance of Dr. Youngblood and his Free To All dispensary, were responsible for the wretchedness and squalour now prevailing and rampant in the town, by teaching false doctrines and sowing the seeds of dissension and discontent.

Mr. Redflame, though ostensibly a Socialist, had a penchant for lurid and turgescient oratory, that worked the people up to a high pitch of excitement. His last effort in the now historic lyceum was noted for its very extravagant language. He belched out defiance and hate, as the crater of Vesuvius pours forth its sea of flame. He so fired the hearts of his five hundred stalwart hearers, that they shouted with one voice for free rent, free clothing, and free beer. This was considered a modest request by Mr. Redflame, and was not, after all, demanding too much, since they had already had free coal and free bread, through the kindness and industry of Mr. Mayflower, who button-holed and personally canvassed every member of his church for a donation for the good work. Editor Broadcast had to do with the ice and milk fund, for which he advertised liberally in his paper, artfully slipping in those advertisements as editorial matter, and imposing on his readers, who believed that Mr. Broadcast was as honest as he claimed to be, and that he had given up his bad practices since his conversion at the street meeting of the army.

Dr. Youngblood took care of the dispensary, and organised free excursions, also a gymnasium with a free soup kitchen. Mr. Redflame declared in one of his passionate appeals to the people, who were now too lazy to work, that wealth was a curse to the country, that rich men should be hanged, their property confiscated, and

proceeds divided among the poor. The earth, he said, belonged to all, and the fullness thereof, that as the earth was our common mother, it was our common heritage too. "Earth to earth, and dust to dust," was the behest and mandate of Heaven; that all were born free and equal, was the dictum and pride of this country of his adoption. In conclusion, he said with forceful if not graceful diction, "The Constitution further declared, 'Ours shall be a government of the people, by the people, and for the people.'"

The pastor, who was presiding officer at this meeting, Mr. Broadcast and Dr. Youngblood being vice-presidents, thought Mr. Redflame a little too radical in his views, and that he went out of his way to abuse the few rich men in his church. He told Mr. Redflame that if this extravagant language were repeated, it would be instrumental in driving him from his parish and from a people whom he loved. He said the few wealthy men would go where there was more safety for their person and property, besides that he had no ambition to be the pastor of a constituency of paupers in his declining years; furthermore, he had a family to support, and their welfare was a matter of much concern to him, so he cautioned the anarchist to be more careful in his future harangues at the lyceum.

THE PASTOR SUFFERS A REDUCTION OF SALARY.

Rev. Mr. Mayflower is much troubled; he paces the floor of his study with uncertain step; he has only returned from a vacation trip to his annual haunts, the Berkshire hills, when a committee of the trustees of his church knock at his study door. They have departed. The salary of the beloved pastor is reduced one half. Another and more inflammatory speech had been delivered at the lyceum by Mr. Redflame, a week before the pastor's return. It was published in the *Wide Awake Journal*, Mr. Broadcast's paper, which the sexton, Mr. Crowsfoot, saved for the pastor's perusal. The pastor, overcome with the fatigue of his journey, and the excitement of meeting the trustees, is too exhausted, and requests Mr. Crowsfoot to read the speech of Mr. Redflame to him. The sexton began.—"Let the torch be lighted, lay waste their lands," "Stop! Stop! enough!" cried the pastor. The sexton who was absorbed in his subject, and quite deaf, did not notice Mr. Mayflower, and continued to read, "Let loose the dogs of war, let destruction and ruin, tornado and cyclone wipe them from the face of the earth." "Stop, I say, stop!" said Rev. Mr. Mayflower,

with gesture as well as voice, and in anger: "Mr. Redflame has ruined my church, bankrupted myself, and leaves my little family almost homeless; I repeat, I want no more of him, I am through with him now."

REV. MR. MAYFLOWER NOW CONSCIOUS THAT SOME ATONEMENT
SHOULD BE MADE FOR HIS ERRORS.

Rev. Mr. Mayflower is full of reminiscences, recollections that wring his heart. He now recognises his mistake, and sees with open eyes, the misery it has brought on others. Around him on every side is disaster, largely the work of his own hands. "As ye sow, so shall ye reap," and had he not, with the help of Mr. Redflame and Mr. Broadcast, with the aid and counsel of Dr. Youngblood, sowed the wind of false doctrine and social economics among his flock, and was he not now reaping the whirlwind?

The pastor made some effort to reconcile his conscience to the altered situation, and in some measure justify himself in that it was the result of good intentions, but he felt that was only an excuse, indeed a subterfuge, since good intentions were branded in flame on lost souls. "The way of the transgressor is hard, and the wages of sin is death," he saw emblazoned on the sky, as he opened the window to get some air, for he was growing faint, but the sign in the heavens was the gleam from a burning church, and that church his own, and the letters painted there, only the reflex of a guilty conscience.

He then and there wished to imitate his prototype of the Scarlet Letter—the one eager to make atonement for a personal sin, the other for social heresies, that while not so intrinsically heinous, were deplorable, far reaching and disastrous in their results—by going to the lyceum, and under its shadow, renouncing these social heresies, and making retribution for his free dispensary folly. But his moral courage failed; he could not summon a resolution strong enough to support his legs across the floor, much less undertake the more hazardous journey to the lyceum, where he sat a listener to the fulminations of Mr. Redflame, and endorsed them by his presence. It was whispered by Dame Rumour, that Mr. Redflame might know something about the burning of the church. This the pastor refused to believe, as he gave Mr. Redflame communion that day. He continued, "Mr. Redflame led our meeting only this evening, and made a touching prayer for the conversion of the heathen, and a speedy gathering together of the nations, in a brotherhood of love." The pastor resented the imputation on his

parishioner's character. He said, "Human nature is not so base," but the fire marshal and underwriters fastened the crime on Mr. Redflame; a jury convicted him, and the judge sentenced him to imprisonment for life.

It appeared at the trial, that the motive which prompted Mr. Redflame to the crime was revenge, directed against the pastor, as he was beginning to look coldly and frown on his lecture projects, and on the occasion of their last meeting, the pastor had told him bluntly, to leave off talking and go to work, and then, perhaps, others in the village would follow his example. To this, Mr. Redflame made no answer, but the colour came to his face, and he bit his lips.

THE REV. DR. MAYFLOWER ANGLING FOR A NEW CHARGE.

Rev. Dr. Mayflower now rallied his shattered nerves, and made what reparation he could, in helping to build up the community which he was so instrumental in tearing down. He asked it as a special favour to him, if Dr. Youngblood would be more careful and discriminating in the distribution of his charity, and cut off his free soup kitchen attached to the lyceum, hoping by this means, to send the able-bodied men loafing there, to do an honest day's work. He also counseled him to hold out the olive branch to the other physicians in the town, as by this means, he might be able to secure their coöperation and support, in bringing about the prosperity, which was now so much needed. At this moment, the sexton, Mr. Crowsfoot, handed the pastor a letter. It contained a request from a deacon in a distant parish, that he kindly occupy the pulpit in his church the following Sabbath, as the loved pastor ministering there was called to his higher reward. Rev. Mayflower, on the following Sunday, preached from the pulpit left vacant by the sainted Dr. Stargaze. The Sunday-school superintendent, in describing the occasion to Dr. Hopewell, Dr. Youngblood's assistant, who has severed his connection with the free-to-all dispensary, and started a private hospital on his own account, in the town, now the scene of his old pastor's new charge, said, "He took us by storm, his preaching had depth and solidity, its manner was sharp, direct, incisive, with the thrill to electrify, the force to convince." The day he preached was a day of Pentecost indeed, and the people went on their way rejoicing. Let us add the pastor rejoiced too, for he had a reasonable expectation of winning a rich congregation.

THE PASTOR'S FAREWELL.

At home in his pulpit the following Sabbath, the preacher is serious, solemn, and reminiscent; grief is heavy at his heart, and his eyes are suffused with tears. After the sermon,—a model sermon, too, which was a review of his labours in the parish during a pastorate of ten years, a labour of love, but, withal, one of disaster to them; its humility and pathos made tears ramble down the wrinkled faces of the deacons and brought sobs, subdued and plaintive, from the ladies of the congregation—he told eloquently how he wrestled in prayer; how the spirit of inspiration came upon him; how he was directed to accept the call from the distant parish. The people there were crying for spiritual food, and praying for a shepherd to lead them and keep them in the way. It was in obedience to a divine mandate and the will of the Master that he should labour in another field.

A solemn stillness fell on the people gathered there. Buoyed up by the strong arm of Christian resignation, and sustained by the faith that was in them, they were willing to let their pastor go. He departed with the benediction of a congregation ringing in his ears.

REV. MR. MAYFLOWER NOT SO INFLUENTIAL WITH SOME OF HIS OLD CONGREGATION.

Notwithstanding the injunction of the pastor, Dr. Black refused to have anything to do with Dr. Youngblood. He thought, to have any dealings with this man, was like compounding a felony; indeed, it might be just as well to say it, he regarded him as a mountebank and charlatan—by no means an ornament to his profession.

The sterling worth that was in him commanded respect, and Dr. Black now began to be influential in the reawakened community. He invited Dr. Goodman to deliver an address before the town council, and give his views as to the course to be pursued in order to bring back the prosperity that so long was a stranger to this now famished and desolate town.

DR. GOODMAN'S ADDRESS ON IDLENESS AND INDUSTRY.

After watching the course of events for some time, and being a witness of so much want and sorrow in our community, I have been convinced of the fact that charity has its limit, and beyond

that limit it loses its sweet savour and gives out a rank and unwholesome odour.

When charity is dispensed at the expense of some and to the detriment of others, it is an oppression, working evil in two ways; the beneficiary of the charity will grow shiftless and lazy, while the donor will ultimately become dependent himself. His misapplied charity has poisoned the well-spring of society, torn that society in twain, and sowed the seeds of privation, laziness, sedition, and crime. It has made fathers drunkards, homes cheerless, and mothers weep. It has, as you see by Dr. Youngblood's experiment, created an army of idlers that have voluntarily thrown down their labour to be partners in the era of good things promised by him and our late pastor, Rev. Mr. Mayflower. When people obtain the necessities of life for the asking, why should they labour at all? Now, our factories are closed, our fertile fields lie waste, our industries are paralysed. The men to operate these varied industries are in free soup kitchens, on free excursions, or hanging around the corridors of free dispensaries, waiting to be cured of imaginary ailments.

Dr. Youngblood, Mr. Broadcast, Rev. Mr. Mayflower, and the notorious Redflame, laboured to inaugurate the workingman's millenium. Only one, however, of these men was sincere and honest in his purpose, and even he, when the storm broke and the bottom fell out of his project, like a rodent from a sinking ship, scented disaster, and ran to cover by taking shelter in the pulpit of a prosperous parish. He had no scruples to leave his old congregation, in mid ocean with a stormy sea, to pilot their way, unaided and alone, to the spiritual shore. He left, on the pretext that he was called through a dream—an inspiration, to take charge of a flock who was hungering for a spiritual love, with which he was abundantly supplied, and of which he was able to distribute and bestow on all who applied at his open door.

The stimulus to labour is, first, hunger; second, a desire for wealth. We cannot attain to the second, except we appreciate and recognise the value of the first. This will explain why we have no millionaires at the equator and so few in the tropics. There, Nature is kind and lavish to her children, where fruit supplies abound without cultivation; there, the people have food without labour.

This prodigality of Nature takes away the stimulus to industry, namely, hunger; the incentive is not there. Nature here is the philanthropist, and has she not brought forth and reared her

legions of degenerates? She left them without the stimuli to industry, but warmed their naked flanks in the rays of a torrid sun, and lulled them to sleep in the shadow of eternal spring.

The million the philanthropist left last year to build a dispensary and found a home for destitute men, will prove a monument to his folly,—a thing to mock his memory, a scourge to flog society; it will enlist an army of beggars, and basking in the sunshine of this bequest, and a beneficiary of it, will be found the anarchist with his torch, the socialist with his jargon, and the burly tramp with his bludgeon and his beer can. The philanthropist, while appeasing their hunger, takes away their stimuli to labour. For this, they will repay society by goading it to anger, and then stabbing it in the back. This will be their gratitude and the monument reared to the philanthropist's memory.

The abuse of charity has worked more mischief and brought more misery in its wake than pestilence and famine; it has crowded our dispensaries to the doors, filled our poorhouses with wrecks of humanity, congested our prisons, and has always been a highway to revolution and the gibbet. Without that million, the lazy man might work; with it, he will not, for while it lasts, his incentive to labour will disappear. After he has drunk his bowl of free soup and eaten the bread of idleness, he will talk of oppression and whisper assassination to his fellow-mendicant, and smite the hand which fed him; that hand, he declares, has forged the chain and locked the shackles that made him a beggar, a bondsman, and a slave.

From time immemorial, the problem has presented itself, "How to help the poor, and what to do to relieve their needs and raise them to be self-supporting and units of value in the social fabric." With a blind and unreasoning zeal Rev. Mr. Mayflower laboured to solve this problem, but, as you all now see, his failure was as signal and complete as that of others who went before him.

As you have heard, the philanthropist left a million to found a dispensary and a home for destitute men. The climax of effort was reached when he founded this so-called industry; really, however, only a satire on charity,—a dispensary, a home, and a free lunch for lazy men. He did not trouble himself to look below the surface, or investigate as to what effect his charity would have on other enterprises and industries. His carelessness in this respect would lead one to the conclusion that there was a motive for his charity. Could it be possible that he, like Dr. Youngblood, only wished to advertise himself? The Golden Rule, "To have a

just regard for the rights of others," he ignored, or, if he considered, brushed aside with contempt, as did Dr. Youngblood the advice of the sage who pointed him the way to honourable success the morning he started on his eventful career. The observance of this rule is the guidepost to honourable and fair dealings among civilised communities. Why did the millionaire neglect to observe this rule? Let us, in charity, draw the veil over his motives, and say he was blind, morally blind, and that he felt he had discharged his obligation to society in founding the dispensary and home for destitute men; that he had rejoiced in the good he had accomplished, and the monument he had raised to perpetuate his memory. But his work, as a matter of fact, had only begun; before him lay a wide field and boundless possibilities. He lost his opportunity by taking the advice of Rev. Mr. Mayflower and Dr. Youngblood. In this case, it was the blind leading the blind, with the usual result, that both fell into the ditch.

Now, what should this rich man have done with his wealth that he threw away in founding this dispensary and home, in order to confer a lasting benefit on his less fortunate fellow-beings? He should first acquaint himself with the significance and import of the word charity, on which one word a volume could be written; second, he should inquire into the cause of the poverty and distress that solicits his bequest, and by removing the cause, wipe out the effect. Here is the rock on which his project foundered: He mistook the effect for the cause,—the impact for the power behind—and was as successful in treatment as was the quack who told his patient he had dropsy, and set about blistering his swollen extremities in the hope of drawing off the fluid and mitigating his sufferings.

The medical quack and the philanthropic quack stand precisely on the same level; both treated the effect for the cause; the quack added to the misery of his patient and hastened his death; the philanthropist's bequest was a stumbling block in the path of progress; it robbed the people of the stimulus to labor, and was a direct hindrance to the advancement of the human race. It diffused laziness, dependence, and crime on every hand, as the sun diffuses light and heat.

In the inauguration of this era of reform, what part has the rich man to play with his million? He must make an effort to develop the moral sense and awaken a pride for industrious activity in the recipient of his charity. If the man or the woman is lazy, the philanthropist must show him or her the necessity for energy and

activity; if they are prodigal and improvident, he must impress them with the advantages to be derived from temperance and self-restraint. If they are illiterate and incompetent, he must teach them the meaning and usefulness of knowledge, and the much that can be accomplished by being proficient in something in consonance with their intelligence, temperament, and environments, in short, he must instruct them in the value of self-reliance, dignity, and independence, that each individual should be self-sustaining, that intemperance and selfishness are barriers to progress, and not compatible with the higher development of our race. In proportion as this simple and easily digested philosophy is disseminated among the people, will poverty die out, and with it the poorhouse, the jail, the free dispensary, and the five-cent lodging house, for then the vexed social problem will have solved itself.

Dr. Youngblood, who was in the hall, left before the conclusion of Dr. Goodman's address. It was noticed that he was disgruntled and perturbed.

A LETTER FROM THE PASTOR.

Dr. White, better known in church circles as Deacon White, read a letter from the old pastor, who still viewed his former congregation with a fatherly eye from afar,—

To My Old and Beloved Flock with Greetings:

Dear friends of the past, whose memory is entwined with sad recollections, our parting almost broke my heart, but as it was my mission to go, I accepted the call with composure and resignation, believing as I do, that it will not be long before that kind Providence that counts the hairs of our heads and keeps us in the hollow of His hand, will fill the place so unworthily occupied by me, with one who will carry on the work I left undone, and bring back some who have wandered from the fold, to eat the husks and drink the wine of a physical and temporary joy that is short-lived and perishable. Keep firm in the faith, and hold fast to that which is good.

Yours in the hope and reward of a kindly life and a propitious future,

JONATHAN MAYFLOWER.

THE DEACON'S CONFESSION.

The letter from the old pastor fell like a bomb, charged with spiritual fire, on this little band of worshipers now gathered in

Dr. Youngblood's Memorial Operating room—though Dr. Youngblood is absent, having run away from the consequences of another shady transaction. They have worshiped here since the burning of the church by the anarchist, Redflame.

Deacon Bloodgood, overcome by the whirlwind of joy that the reading of the pastor's letter called forth, being a good man, thought it no disgrace to make a few remarks about a thing that hung to his skirts, and flapped its ugly wings like a black cloud, over a conscience otherwise clear, and a life without blame. He began,—

“Fellow Christians and loved ones, others before me have made confession to their shortcomings in this very operating room, made memorable by the brilliant achievements of Dr. Youngblood's scalpel, and the farewell address of Rev. Mr. Mayflower, and now hallowed by the pathetic epistle just read with so much eloquence by Brother White. An obligation was enjoined on all Christians when the word was spoken, ‘Confess your sins, one to another.’ Now I must tell you with shame and humiliation the part I played in bringing about this reign of poverty, and the general hard times that have pinched you so, robbing you of the pleasure of sending your annual donation this year to the Board of Foreign Missions, for the conversion of the heathen, that compelled you to cut down your beloved pastor's salary one half, and that still compels you to worship in this Memorial Operating room. My resolution to make this confession became fixed, when we had to build a new wing to the hospital of which your humble Christian brother is trustee; if possible, this resolution became more fixed after hearing the address of Dr. Goodman before the Town council, of which I am also a member, and the report of the committee of that council, that a new jail was necessary and imperative. It was conferring an honour on me which I do not believe I deserved, when I was made president of the Board of Governors of the Free To All Memorial dispensary, the walls of which shelter us now.

“As president of the Board of Governors of the Free To All, being a hard-headed business man before I became governor of our town hospital and president of the Memorial, I brought all the experience of forty years, close attention to business, into my new office. I saw around me an opportunity to build up the hospital and dispensary, and to accomplish this purpose, utilised every force at my command. Good doctors were standing in line at the hospital gate, hat in hand, with credentials, waiting a nod

or a beck from me that would transform them into surgeons and visiting physicians at our hospital or dispensary. One of them told me, it was the American Derby of the profession, to secure one of these prizes I had at my ready disposal. He said, 'Having secured this prize, his futurity was already a reality,' he would be talked about, called into consultation, and lifted above the heads of his brother practitioners, who, after a little while, though jealous now, will learn to respect and esteem him themselves.

"My system of transacting business was so complete and perfect in detail, and the punishment for the infraction of a by-law, so condign and swift, that insubordination was rare and never formidable at our hospital or dispensary. Our effort to discriminate between the deserving and the impostor at our hospital gate, was an imposition and a sham. While we pretended to treat only the deserving and needy at our hospital and dispensary, we waved to the crowds to come on; we wished to make a show; we had a mania to increase the list of paupers and mendicants on our dispensary ledger, just as I had the burning ambition to outsell my neighbour in the leather business in the swamp years ago, before I retired to private life.

"Fellow Christians, it has been said, 'The evil men do, lives after them.' The evil I have done lives now before my eyes; I can see it in your hollow cheeks and haggard faces, in your poorly furnished homes and naked children. The abuse of charity, as Dr. Goodman so well said, encouraged men to idleness, and paved the way to the poorhouse: I can see it all now. To increase my misery, and fill the cup of my woe I have still a sadder recollection to relate, and I relate it with fear and trembling, lest I should be struck dead by the righteous vengeance of heaven for this traitorous, cowardly, and perfidious act of mine.

"In a moment of weakness, Satan whispered in my ear that the well-dressed and respectable element that crowded to my dispensary should have protection; that their interests, their honour, and their presence demanded some mark of recognition from the governors of the hospital and the Free To All Memorial dispensary. They did not wish to be branded as paupers or considered as dependents; they were helping the institution by their names, and giving it tone by their presence; they were willing to pay a dollar a month to me to take the sting out of charity and give them a true bill of lading for the full voyage, and a cabin passage

to health and activity, while the others, less fortunate, at our dispensary door, had to take refuge in the steerage.

"With shame and contrition, I here confess, I acceded to this dishonourable, this outrageous demand, and gave these people, these paupers, rights and privileges, properly belonging to the honest, private patient, who consults a physician at his office, and who was at one time, before the advent of my nefarious scheme and dollar-a-month abomination, willing and eager to pay for the same. This was the unkindest cut of all, a stab in the vitals to the men who have made the practice of medicine honourable, and elevated its standard to a scientific calling. I closed the doors to a laudable ambition in these men, namely, to make a respectable livelihood, and to be factors in the community for whom they laboured and amongst whom they cast their lot.

"Yes, fellow-christians, these honourable and competent practitioners had to close their office doors, because we inveigled and allured their patients to our dollar-a-month banquet; but our charity was a charnel-house, and our banquet, the banquet of death to the community, and a spot that will not wash out on this conscience of mine. True, some governors of our hospital and dispensary opposed me in my action, but, as the contest was close, my vote was affirmative and decisive.

"The practitioner fought manfully for his rights at first, but it was the battle of the many with one, it was his little office against our organised opposition; he succumbed in the unequal struggle. It is written: 'The race is not given to the swift, nor the battle to the strong.' This is demonstrated by the poverty now prevailing, and further demonstrated by the sign in the heavens, seen by our late pastor, Mr. Mayflower, in the reflection of his conscience and the burning of his church. I told my brother governors at our meeting yesterday that this abomination should cease; that charity was beautiful, but masquerading in her garb was a crime that would not go unpunished. I pointed out the deplorable condition of the industries, the army of idlers in the street, and the destitution we brought home to the legitimate practice of medicine.

"These injustices were kindled into life by our abuse of sweet charity, and fanned into flame by the dollar-a-month monstrosity and abomination. This hybrid monster, with the face of charity, but the body of a misshapen and hideous demon, is sapping the life blood out of the community to-day. It is a stench in the nostrils of honest manhood, and, I repeat again, an abomination, a

crime. True, it has put a few dollars in our coffers, but it is the price of our treason, and the blood of an honourable and deserving profession.

"Brother governors, we tried to accomplish an impossible feat in our effort to unite charity with manly independence: they spurned each other. Charity is lowly and vaunteth not herself. She seeks poverty in the slums and byways, teaches it the language of independence and the lesson of stalwart manhood.

"She takes the filth-stained lyre
From pauper and from slave,
To teach the languid wires
The sounds that manhood gave."

"She lifts it from its lowly habitation, and starts it on its journey with the force and impetus that commends it to success."

The governor continued: "While charity may associate with poverty and squalor, they will not assimilate; they have nothing in common; their relative characters and features are as different as day is from night, light from darkness, beauty from a shapeless mass of ragged rocks.

"The complement of their social equation is the monster we have conjured into life—namely, the dollar-a-month dispensary fraud—so that I feel branded on my forehead now by this fraud. We have inoculated charity with a virus and defiled her by its touch; the beautiful goddess we have thrown into a sewer, to be transformed by the slush into a monument to our perfidy and treason. I repeat, fellow-christians, I cannot justify myself before you, or hide behind a legal opinion of Justice Youngman. I want to bear the full burden of my shame, and, as such, make some atonement for my crime."

The deacon, overcome by exhaustion from the expenditure of physical energy and mental excitement that his confession had occasioned him—for he was an old man—sank into his chair, crushed, defeated, and covered with humiliation.

A hungry physician, also a member of the little congregation, was an interested listener to the deacon's confession, and, without the consciousness of doing an injury or injustice to any one, recited aloud the lines,—

"The desolator desolate,
The victor overthrown,
The arbiter of other's fate
Now suppliant for his own."

The good deacon, with his face buried in his hands and happily unconscious of what was transpiring around him—his thoughts turned inward on themselves—was automatically chanting,—

“Rock of Ages cleft for me,
Let me hide myself in Thee.”

DR. WHITE'S TEMPTATION.

It can be seen that from the abuse of hospital charity, and the hard times and financial stress prevailing, the honest physician is a sufferer. One of these sufferers is Dr. White, who, though old, has yet some vigour in him, enough to resist temptation and fight the battle for the profession in which he takes such pride, and of which he is glad to be accounted a member. No patients are coming to Dr. White's office and he has few outside calls. The popular tide is running high, and sets toward the Free-to-all Memorial Dispensary. It threatens to swamp and carry the old physician in its path.

One day at the spring-tide of its flow, the old physician was jostled, elbowed, and trampled on in this mad rush of the human tide to the Free-to-all Memorial Dispensary and Soup-kitchen Annex. This old man's little store was fast disappearing, like snow under the rays of a hot sun. Starvation stared him in the face. Just like his old pastor, Rev. Mr. Mayflower, he cared not for himself, it was for his family; they were all to him.

At midnight Dr. White is aroused from a broken slumber by another physician, whom he is rather surprised to see and at such an unusual hour, for he had only the most casual acquaintance with him and gave this acquaintance the most formal acknowledgment. This visitor is a successful quack, whose heart is touched by the woes and poverty he saw reflected in Mrs. White's face, as he passed her on the street the other day. He came at midnight, as if he hoped the darkness would hide and shelter him in the commission of a dishonourable act. He came to tempt Dr. White. Dr. Dash was affluent and the partner in business or crime of Dr. Bounce, the hustler in their symptom-blank, flim-flam, and tricky advertising schemes. He has houses and lands, blooded stock, and a magnificent town residence. His business offices on the thoroughfare—for privacy would be fatal to him—are fitted up in gorgeous style. He also has a pew, but not in Rev. Mr. Mayflower's old church. He gives liberally to foreign missions, pays tribute to the political bosses to nominate a demo-

cratic king to reign over him and protect his interests. He is the right-hand man of the pastor and chairman of the board of trustees of his church. He told Dr. White that he understood his poverty and the source from which it came; that he saw a way of deliverance for him; that he would lead him into that way, and once there, he could take care of himself in the journey to prosperity.

Slipping into the doctor's hand a check for fifty dollars, he requested him to get out of bed, as he wished a further interview in the parlour.

“‘Come into my parlour,’ said the spider to the fly.”

Dr. White's eyes blinked and snapped when on the threshold of the door—it was from the flash of the diamond displayed in the immaculate bosom and the electric apparatus attached to the kodak of Dr. Dash. With kodak ready, he said he wanted two pictures of Dr. White, one before, and one after, treatment. He wanted them for the *Wide Awake Journal* next morning. He said it was a kind of reversal of custom, as in the first snap he wished him to look just as he was, woe-begone and careworn. In the second shot, he was to look pleasant, as if his sufferings were over and he saw new light.

Dr. White was about to expostulate, when shut off by his visitor: “Only your consent, Dr. White, merely your consent; I do the rest. It is to say, over your own signature, how you were cured of a long-standing deafness and a defective sight, after all other means failed to give relief; to tell of the days of agony and nights of misery you were compelled to endure, when noises like the roaring of many waters and sounds like the belching of a locomotive swept like a blast-furnace through your tortured brain. It is to tell how the celebrated Professor Long was puzzled, baffled, to understand the cause or apply a remedy to your disease; to say the famous Professor Short was equally helpless, and how both failed to mitigate your tortures or give any relief; to tell in song and story how the combined talent of your great medical lights failed and paled, like the light of a tallow candle in the blaze of the midday sun, when pitted against the skill and inimitable art of the celebrated specialists, Drs. Dash and Bounce, with the offices on the Boulevard. Doctor, do not hesitate, or throw away a golden opportunity. I assure you, Dr. White, the practice of medicine is a business like any other, the object of which is to make money; if it fails in this respect, it fails altogether.” He

told the doctor medical etiquette did not pay rent, and that hunger could not be appeased by membership in a medical society, or even by being a fellow of an academy. He continued: "‘Fine feathers make fine birds,’ but the most beautiful and graceful of these birds—namely, the peacock—which is also known as a proud bird, in fact symbolical of pride and vanity, if shorn of its plumage and plucked of its feathers, would make a rather poor Thanksgiving dinner. The turkey is my symbol; you can have the peacock as yours. To be sure, the turkey is not handsome, but withal, heavy and substantial, and has a fragrant odour for a hungry palate." Continuing, he declared: "The peacock is all show and no reality; the turkey is clumsy but juicy; the one appeals to the eye, the other to the stomach. I repeat, ‘you keep your fine bird’; I am satisfied with mine. Dr. White, let me tell you, all the medical etiquette in the universe is not as potent to drive a creditor from your door as a ten-dollar bill.

"The quacks are not skilled in the amenities and folk-lore of your nonsensical societies; your by-laws are feeble to punish the guilty and helpless to protect the innocent. You are held together by a rope of sand—an illusion—an *ignis-fatuus*. The philosophy of your boasted societies is largely metaphorical, and founded on a misconception of human nature, which any of you, thirty or more years in active practice, have found out to your cost.

"This is why I left the fold and took to the road as a medical pirate and brigand, where your sympathies and all your energies should have been enlisted; you were only disinterested spectators, and left me to fight the battle alone, to be crushed and defeated, while my cause was a just and holy one. As a high-spirited and honest woman was driven to the street, I was driven from the fold. Your societies talk loudly and learnedly about the public health, and your efforts to advance and elevate the public morals. When they failed to protect those of their own household, how can they hope to be successful in a wider field? This is why, dear doctor, you cannot impress your individuality on the public mind or manners, and why you are now, and always will be, till the coming of the millennium, negative and feeble, in affairs of finance and state. I have further discovered that the members of your societies are interested in their individual interests, rather than the welfare of the societies as a whole. I repeat, Dr. White, any body of men, calling themselves a society, in the arts or trades, so regardless of the welfare and interests of its members, could not hold together half a year; but enough on what has no

interest for me. What occupies my attention now, since I left your society, is making money and watching the district attorney, by being careful not to step over the danger line into the domain of criminality. However, it is only fair to say that that functionary has given me very little trouble; he acts, with regard to me, as if he were under some mesmeric spell or other occult influence, or a resident or guardian of the interests of some other planet than ours.

"The reason may be this: Looked at in a commercial sense and latter-day light, mine is a legitimate business, just like the grocer, the dry goods, or the furniture trade. The grocer, the dry goods, and the furniture men cry fraud on each other. The grocer says his brother in trade adulterates his food supply, and that this brother is 'a fraud and a cheat; the same cry is raised by the dry goods man and the furniture man against each other, that he is procuring money under false pretenses. They lie in advertising their wares; I lie in advertising mine. It used to be that, 'All was fair in love and war,' but now business has a place on this black list of social piracy that has thrust itself through the public conscience, and choked that conscience into silence with its glamour and its gallantry. The district attorney thinks so, too, since he has not, to my knowledge, prosecuted any of these fraudulent concerns, though, like myself, they are breaking the law every day in dishonest practices. I have not even heard the voice of the press, the boasted guardian of the public weal and honour, though waiting to hear that voice long. I suppose it is stifled, hushed, drowned, by the flood of advertisements these fraudulent business concerns turn into the feed trough of that press. That is the reason they are mum about my own fraudulent advertisements on diseases I have not cured and about a public I have fooled. My advertising roll of bills has a sedative influence on their bellicose and caustic pens. The press does not care a rap for you, Dr. White, or your societies, since you send no advertising grist to their mills."

Dr. White, his face already pale, grew paler. He summoned the remnant of that little force that slumbered within him, and, rising from his chair, he began: "Dr. Dash, if your visit to me to-night was one of a single purpose—that purpose to do good without hope of reward—my pride, my manhood, would rebel and cry out against being the recipient of charity from any one, much less from you, sir, coming here for the purpose of advancing your own interests, masked by the plea of benefiting a fellow-man in

distress. Your proposition I scorn. It is monstrous; it outrages every manly and honourable impulse that my nature is capable of conceiving. I refuse, sir, to accede to your request, and hand back what you considered would be the price of my shame. I have been honoured in peace and war; here are the emblems of this appreciation and honour; here the medals and tokens I love so long and well, which you see adorn this threadbare coat of mine, which will go down to the grave unsullied and untarnished by any barter for lucre. They stand for worth and sturdy manhood, for an honest cause and a noble profession. Go, Dr. Dash, I refuse to be tempted. My family will be protected when I am gone. Shipwreck and starvation may come, but disgrace never. Welcome,

‘Death, the old man’s dearest friend,
The kindest and the best.’”

THE SUMMARY OF CAUSES LEADING TO THE ABUSE OF CHARITY.

In the foregoing sketch, a few of the leading causes for the abuse of medical charity are given; there are other causes, but since brevity and time are precious, they will not be touched on here. However, no suffering or hardship will be entailed on account of this omission, since they are mostly auxiliary, and offshoots of the original and principal grievance, cited in this article by example and illustration, which method, to the writer’s mind, is the best possible way to present a truth. By this means, a fact is made more palatable, and an impression far more enduring than by the old method of generalisation and moralising—reaching conclusions by comparison, deduction, and inference; the one entertains while it instructs, the other, by its monotony and infinity of detail, obscures and buries the main facts sought to be impressed in a grave of verbose redundancy.

Dr. Youngblood is the incarnation of the pernicious activity and commonplace audacity with which the medical profession is to-day honeycombed, undermined, and disgraced. The Youngbloods have made our calling the jest of the people; they have so injected the element of fakir and

three-card monte-man into the current of medical thought, that the honest and intelligent practitioner blushes while contemplating the future of his profession. These Youngbloods have divided, demoralised, and prostituted our profession to their own selfish ends, so that it is an easy prey for the wily hospital governor to feed on, or the philosopher to base a truth or point a moral with. Mr. Broadcast is the soul and embodiment of the unscrupulous, dishonourable editor, who will stoop to anything to further and advance his individual interests. While one sheet of his journal is devoted to editorials, eulogising fair business dealings, the other side is full of fraudulent advertisements; with one hand he smites the usurper and locks the embezzler in a cell, while with the other he receives the reward of conspiracy and cunning from his partnership with the dishonest business man, the impostor, and the quack. The Rev. Mr. Mayflower is a type of the clergy who are preaching from their pulpits and proclaiming from the lecture platform their sympathy with the poor, and of the efforts they are making to advance the interests and better the condition of the labouring classes.

These clergy are loud in their condemnation of any scheme to improve the condition of the general practitioner, whom they say has no grievance, and whose business it is, night or day, to answer the call of all who may apply at his door-bell, without being inquisitive as to whether he will receive a compensation for his services.

These reverend gentlemen claim that the physician has no moral right to ask for a reward for his labour. "This should be left to the generosity or judgment of the patient," say these obliging gentlemen.

By preaching such doctrines, and emphasising these absurd assertions in private and public, they have inflicted a hardship on the medical profession, and largely contribute to make the poor poorer, and the discontented more discontent. They, more than any other cause, have helped to fill the waiting-rooms of the hospitals and dispensaries with medical

paupers, and, worse yet, they put seditious words in their mouths and revolutionary ideas in their heads about the rights of the poor and the duty of government.

The anarchist, strange to say, is largely the product of the social teachings of the Mayflower brand of clergyman, who is careful to run away from trouble himself and better his condition whenever an opportunity offers; he is perfectly willing to leave his old flock to shift for themselves, to hope and pray as best they can.

Dr. Dash is a sample of that moral reptile known as "advertising quack." The effrontery of this man is remarkable. By organised fraud and misrepresentation, he reaps his harvest of dollars, and flourishes like a green bay tree, notwithstanding that the search-light of an aroused public opinion is directed on his methods; he still reposes, with a beautiful serenity, in the confidence of his victims, and, like the surgeon of the Free-to-all dispensary, hides behind a fog of legal technicalities, placed on the track of justice by Mr. Sharp, his attorney.

The pernicious influence of the Youngbloods, Mayflowers, Broadcasts, Redflames, and Dashes, must be destroyed before any diminution in charity abuse is possible.

The combined influence of these men is the moral St. Lawrence, feeding the gulf of charity. Behind this gulf is a perverted public sentiment, fed by millionaires and some well-meaning philanthropists—as the teeming waters of the St. Lawrence are fed by the great chain of North American lakes.

The hospital governor is only a condition, a mere incident in this Niagara of charity, a sort of caretaker at the falls, so to speak. The poor helpless man is as unable to shoot these rapids as was Dr. Goodman or the Rev. Mr. Mayflower; indeed, he must use extreme caution that he is not drawn into the vortex and swallowed in the maelstrom of the seething waters of the abyss below. He will ultimately be in as much danger for his life as was old Dr. White in being swept away by the human tide that rushed through the thoroughfare to the Free-to-all dispensary.

The hospital and its adopted child, the dispensary, will collapse, shrinking to their normal proportions, when rich men are convinced that it is not to their interest to further contribute to the maintenance of these institutions. Rich men, as a rule, are selfish. It is the lack of generosity and kindness in their natures, as much, if not more, than business ability, that contributes so largely to their success. In order to acquire their wealth, what human wrecks are strewn in their wake! What a cyclone of misery has been the companion of their triumphal march!

“Ah! that some warning vision there,
Some voice that might have spoken.”

The millionaire treads on broken hearts, lacerated feelings, and blighted pledges—all offered as a sacrifice on the altar of Mammon. While treading on the graves of his victims, and in possession of the millions his soul craved, he suddenly experiences a revolution of feeling and has a religious spasm, the reflex of a troubled conscience, which impels him to build a chapel, found a hospital, or endow a dispensary. He is as selfish in his new enterprise as he was in the accumulation of his millions, and persistently refuses to take those into his confidence who could show him how to make his bequest of the greatest good to the greatest number of human beings, and very probably, like Dr. Youngblood, wishes to advertise himself while playing the rôle of philanthropist and humanitarian.

CONCLUSIONS.

The problem of the hour, then, is to convince rich men that their interests are assailed and their future imperiled by the countenance and aid they are giving to indiscriminate charity; that this so-called charity is a two-edged sword, and will cut both ways. This cannot be done by the gathering of a few well-meaning gentlemen at a hall on Madison avenue, or by the protest of a state medical society at its

annual meeting. However honest in purpose, they only succeed in making themselves look ridiculous, and a plaything of the great public which is looking through the fence across the way. The efforts of these gentlemen very much resemble that of the famous old lady in her heroic endeavour to hurl back and stem the rising tide with her broom, or the fisherman to team the ocean with an oyster shell. The public will say we are interested parties in the matter and not likely to give a disinterested opinion; that our meetings of protest are made up largely of two classes, the big fellows and the little fellows—namely, those who are able and those who are not able to make a living at practice; that the big fellows are helping the little fellows to climb the apple tree; that it is a contest where there is only a plaintiff in the suit, and no action at law.

Some good has been accomplished, however, and in the right direction, by a few writers in the medical press, notably by that well known and long time champion of the general practitioner, Dr. George F. Shrady of New York.

The Titanic blows of this sturdy yeoman, with his sledge hammer pen, through the editorial columnus of the *Record*, resound through the medical world; the echoes of these blows have awakened the millionaire and philanthropist to hear that their interests and their future largely depend on the manner and method with which they handle this new danger, of how to control and regulate the problem of charity.

Is it any wonder, then, as the poor physicians survey the field and recognise the overwhelming odds against them—the forces with which they are to compete—the crowd outside and the many in their own ranks, that they grow despondent and exclaim in their anguish of soul, “What must we do to be saved?”

A CURIOUS CONDITION OF THE APPENDIX VERMIFORMIS, AS FOUND AT OPERATION.

By E. D. FERGUSON, M. D., of Rensselaer County.

October 12, 1897.

The questions connected with appendicitis have been so frequently and extensively discussed during recent years, that as a subject it may be considered somewhat threadbare, but the practical elements involved in our clinical work have been marked by such divergent views and statements that it is fair to assume that the last word entitled to respectful consideration has not been spoken.

The specimen which I shall present, and which is unique so far as my experience extends, will serve as an excuse for a few practical considerations relative to the problem, as to when we should operate. I will first relate the case and present the specimen, in connection with one that is its complement at the other extreme of the special pathological process which may illustrate; the latter case having come under observation since giving the title for this paper to the committee of arrangements.

The following note from the attending physician, Dr. W. J. Hunt of Glens Falls, N. Y., gives the outline of the previous history so far as it bears on our present purpose:

“R. E. A., age 32; occupation, telegraph operator; previous history, good. Had his first attack of appendicitis in March, 1893. An abscess developed and opened into the bowel. Had a slight attack in November, 1893, and recovered promptly. In December, 1896, began to have pain; was in bed and up and around at intervals until January 23, 1897, when I first saw him. At that time there was a large mass in the region of the appendix; he had a high fever and much pain. He was given opium and strychnine. An ice bag was kept constantly applied until all acute symptoms subsided, and he was fed on albumen water and kept quiet in bed

until February 3, 1897, when the appendix was removed. He developed a broncho-pneumonia the third day after operation. An abscess developed five or six days after the operation. This was opened, washed out, and kept packed with iodoform gauze. Otherwise recovery was uneventful. He returned to work May 1, and has done the hardest summer's work of his life."

The attack in 1893 was represented as protracted, having been accompanied by high fever, chills, a tumor in the appendicular region, which gave the usual evidence of suppuration, and it seemed there was ample ground to conclude that the abscess emptied into the bowel.

At the time of the operation, the last attack had so far subsided that the procedure might properly be termed an intermediate operation.

On opening the abdomen, the bowels were not so intimately adherent to the parietal peritoneum as to materially complicate the operation, but the mass felt before making the incision was found to consist of the caecum, lower portion of the colon, small intestines, and omentum, welded into a common mass by ancient adhesions. A careful, and consequently somewhat tedious, hunt was then instituted for the appendix. Beginning at the colon, where the longitudinal band could be recognised, the adhesions were separated downwards until the caecum had been found, but nowhere in the region where the appendix should be located could any trace of that organ be found. Knowing the erratic location of the organ in some instances, a systematic search was begun, thinking that possibly it might have become atrophied into a mere band, as in a puzzling case on a former occasion.

During the procedure, attention was attracted to a mass about the size of the last phalanx of my thumb, situated near the iliac muscle and between two coils of the small intestine and the colon, though apparently more intimately connected with the small intestine than with the colon.

At first the mass seemed like a large exudate of lymph, but on partial separation its nature was discovered, it being the distal portion of the appendix which had been separated by a circular amputation from gangrene.

Attention was then given to the normal site of the appendix, and it was found that a probe could be passed into the caecum at that point, showing that in some way a channel had been maintained for the conduction of the secretion of this apparently functionally active stump into the bowel.

The distance from the open end of the stump to the opening into the bowel was slightly greater than two inches.

The appendix was peeled from its bed by the fingers, and no sign of a mesentery was seen, though it is probable that some small portion of mesentery remained to furnish nutritive supplies, rather than to suppose that adhesions had served for its nutrition.

No evidence of pus or recent inflammatory exudate was seen, hence the opening into the caecum was infolded and closed, and the abdomen closed without drainage. It is probable that the post-operation abscess was due to some septic material in the operative field, though it seemed to be limited to the incisions in the walls, rather than to have proceeded from the intra-peritoneal parts.

The specimen is a fair example of amputation by gangrene, and from the history, the only conclusion that seems legitimate is that this amputation occurred in 1893, about four years prior to the removal of the stump. It is fair to assume that quite a portion of the appendix was destroyed by gangrene, from the base of the attachment to the caecum for an indeterminate distance. It is manifest that one cannot assume a loss by gangrene of a portion just equal to the distance from the opening in the bowel to the stump. It may have been greater distance—it was probably less, and the stump, therefore, was displaced to some extent by traction. The specimen showed that the process of healing was performed at some time remote from the time of operation, and the clinical history would justify the conclusion that the amputation occurred in 1893, and presumably the abscess then present emptied into the caecum at the normal site of the implantation of the appendix, or that the point of opening of the abscess into the bowel was near that point, and was maintained as a channel for the escape of the secretion from what remained of the appendix.

Gangrene of the appendix, with spontaneous separation, is not a rare event, but the maintenance of the distal portion in an apparently normal functional condition is unique in my experience.

I will present, in connection with this specimen, a case at the other end of the process :

The case was that of a young man about nineteen years of age, a patient of Dr. John T. Cahill of Hoosick Falls, N. Y., who was first seen by me on August 7, 1897. He was then in the first day of an attack of appendicitis, and gave a history of at least one mild attack before. The symptoms and signs appeared to justify an expectant plan of treatment, hence an operation was deferred. It was practically agreed that should he recover from that attack without suppuration, the appendix would be removed promptly at any recurrent attack, and possibly at some elective time even should there be no recurrence, as the patient and family were loath to have such a volcano around.

On September 23, 1897, he again showed the symptoms of appendicitis, and though about thirty miles away from me, I was able to reach him and begin the operation about six hours after the onset of the attack.

The appendix was free from adhesions, and aside from the swollen and hyperaemic condition of the distal half, and a small mass of yellow lymph, about the size of a grain of wheat, at the beginning of the swollen portion, there was no pathological change. The peritoneal coat was stripped from a portion of the proximal and healthy portion of the appendix; it was amputated close to the bowel; after a purse stitch had been placed around the site of the base, the peritoneal cuff was inverted, the purse stitch drawn and tied, and that in turn buried with two or three Lembert stitches. There was a large mesentery to the appendix, which was first "quilted" off by a cobbler's stitch, and the stump covered in by the Lembert stitches.

It has not been possible for me to preserve the specimen so as to show the appearance when it was opened, but you can see the line limiting the distal from the proximal portion. This distal portion was swollen to two or three times the diameter of the remaining part; it was very much congested; its blood supply, through its mesentery, was larger; the mucous coat was very much congested and swollen, being thrown into folds with deep sulci; there was very little secretion, and at the point separating the two portions, there was a black line about one sixteenth of an inch in

width, which, in a direct circular course, and of practically uniform width, surrounded the lumen at that point. It was not practical for me to settle whether this line of commencing gangrene was favoured by thrombotic trouble in a special vessel at that point, or was due to the pressure of a contiguous swollen and highly vascularised mucous coat.

The practical point was, that here existed a condition favourable to a circular amputation by gangrene, and the retention of a distal portion of the stump by reason of its ample vascular supply. Total gangrene of the appendix and gangrenous perforation need no consideration at our hands, but the circular gangrene, with maintenance of the integrity of the distal portion and the survival of the patient for a term of years, is a combination that attracts attention.

It would add to the interest of the specimens if the exact appearance observed at the removal could have been preserved. In the one case, the evidence of healing at a time remotely anterior to the operation would then be clear, while the early steps in the morbid process would be apparent in the other. In neither instance would microscopic sections be required to demonstrate disease, a means that seems to be required in some cases as a justification for the operation, a position that can hardly be defended on any sound surgical basis, and would hardly find advocates if operators were patients.

It is my wish to avoid anything like harsh criticism, but it has seemed to me that should many of the operators who now assume the position that given the diagnosis of appendicitis, operation should follow at once as a surgical corollary, have the disease, each one would in all probability begin to weigh the elements of chances connected with the natural history of the affection, and at the same time give a certain importance to the risks connected with the operation.

Some striking sentences can be formed concerning the desirability of being rid of the appendix, and many special pleas can be made as to the relative safety of the operation, but the more radical of that kind of talk and writing has

appeared to me without a proper foundation in theory or clinical experience.

It is not necessary for me to consider the grounds of justification for operation in cases where the disease is recurrent, where it is very protracted, or where an abscess exists. Radical and conservative will come to a like conclusion in such cases.

It is in the primary attack, and in particular during the early stages of the disease, that the dictum to operate at once seems erroneous. The only basis on which an immediate operation in every case can be justified is the liability to perforation without protective adhesions, whereby diffuse, septic peritonitis results. If the impression that has gone forth and become somewhat common on the part of the general public, that appendicitis is in itself a disease with a very high percentage of mortality, were true, then a basis for the early operation might exist, though the case would not be fully made out; but with attention so forcibly directed to the malady during recent years, it is now becoming recognised that appendicitis is a very common disease. The fact that many of the cases classed as colic and indigestion in former times are now believed to be brief attacks of appendicitis, does not help the argumentative side for the advocate of immediate operation, though it might add to the volume of his clinical material. The facts in the case now seem to warrant the conclusion that the mortality from appendicitis, when left to pursue its course without surgical interference, is very small, and in particular it is very small from that source which is used as an argument for immediate operation, to wit, diffuse, septic peritonitis. If we are to protect all patients from that danger, it is our duty to operate in all cases, whether the symptoms be severe or mild, for clinical experience has demonstrated that no basis exists whereby we can foresee an impending perforation without protective adhesions.

It is that fact which serves as the *point d'appui* for the arguments of those who advocate immediate operation, and

from which they "play to the galleries," drawing Dantesque pictures of the diabolism of the appendix and minimising the risks of the operative procedure.

I wish to have it clearly understood that I am not calling in question the honesty of those who take the ground favouring immediate operation. My only claim is that their vision has become astigmatic, either through their own experience with cases of the disease, or through a failure to duly estimate all the available evidence.

Then, again, it is easy to become a partisan, and from some element of a cause that appeals to us, to become blind to other, possibly even more important and different, conditions.

The fault that seems most common is, in my judgment, to minimise the risks of the operation, and in particular, to base a conclusion on a certain individual experience.

In estimating the hazard to life from any operation, our conclusion should be based upon as broad a basis of reliable data as can be constructed. To that end, probably no more reliable statistics can be procured than the records of our hospitals, for here we have operators certainly possessing an average degree of skill, and operating under a fair average of favourable circumstances when both the patient and the environment are considered. It will hardly be claimed that the average mortality of "belly cases" in hospitals is less than ten per cent., and it is probable that the mortality of appendicular operations is fully up to the average of the general class of abdominal operations. Some recent statistics give even a higher rate than ten per cent.

The writer feels that he can press this view of the case, from the fact that he can iterate the statement he made three years ago, in a discussion of this subject at a meeting of the association, *i. e.*, that he has never lost a case of appendicitis after operation. Such an experience, however, has little value, for, on the other hand, he has never had a recovery where he has operated for obstruction of the bowels. Not having kept a record of the number of operations, I am

unable to parade figures with the confidence so frequently manifested, and though the number of cases is not so large as can be adduced by many operators, still I have operated a sufficient number of times during a term of years to feel that my experience has some value. If conclusions were to be based on my experience, I would say that operation for appendicitis was devoid of danger, and operation for obstruction of the bowels was uniformly fatal, conclusions manifestly at variance with the fact. The experience of Dudley in lithotomy would hardly serve as a rational basis for judging the value of litholapaxy at present. A broader view of the subject is demanded, though not always accorded when it becomes polemical.

If we are to save our patients from the contingency of a diffuse septic peritonitis, due to perforation without protective adhesions, we must operate on all cases of appendicitis, the mild as well as the severe. That view of the case I accept, and probably no one will be found to gainsay it. But what does this mean when we view it in the light of reasonably settled facts? The subject presents itself to me somewhat in this light. Taking all the cases of appendicitis, it is probable that from 80 to 90 per cent. will recover from the first attack without perforation or suppuration. Of those who do not so recover, from 80 to 90 per cent. will have a circumscribed collection of pus, and will be relieved by an exceedingly simple, and fairly safe, operative procedure. The very small percentage left will have more serious conditions, including the rapidly generalised septic peritonitis. Of these cases a very large per cent. will perish, but to prevent this condition, and to save these patients we are asked to operate on all cases, with the fact before us that the operative mortality can scarcely be expected to be in the near future less than about 10 per cent.

I am anxious to establish the position of modern surgery on as high a plane as possible, for I believe it merits it, but there is such a thing as making too large claims and too strong a statement of the case. The surgeon can do much,

but so can Nature. In a certain sense, the first case related in this paper had recovered from a very serious and unusual condition of affairs, and it is not at all improbable that the second case might have recovered from the attack. The pain was subsiding at the time of the operation, and the gangrene had not extended so far or so deep but that a repair might have occurred without perforation. It was only necessary for the swelling to have subsided somewhat so as to remove strangulation when, granting that embolism or thrombosis of a septic character was not present in the vessels, repair would almost certainly ensue. That a certain amount of scar material would result, and favour future attacks, relates to our duty in recurrent attacks, and is not a part of our present consideration of the subject.

In so far as I can estimate my duty in these cases, my conclusions have been, that, in all cases of appendicitis during the first attack, I do not operate unless suppuration or diffuse peritonitis requires it. In relapsing or recurrent cases, in which it is probable that distortion or other permanent injury to the appendix exists, operate. In this way, it is quite probable that we may occasionally have the sad experience of seeing a patient perish, who might have recovered under operation, but we will be spared the still sadder reflection that we have been instrumental in the death of a larger number who might have recovered, had we abstained from operating.

But, whatever may be our view of the case, let us not deceive ourselves through a fortunate personal experience, by the assumption that the operation, in fact that any operation involving the abdominal cavity, is devoid of danger.

DISCUSSION.

DR. FREDERICK HOLME WIGGIN, of New York county, congratulated the author on this admirable paper. He would only take issue with regard to the treatment of cases of appendicitis in the first attack. Some of these cases should not be operated upon, yet he felt that all cases of appendicitis should be considered as surgical

cases after the diagnosis had been made. At first, we were only justified in using such mild measures as the evacuation of the bowel by enemata, and the application of cold to the right side of the abdomen. If, in spite of these measures, the symptoms continued to increase in severity, at the end of thirty-six hours he would favour operation. The pulse, in his experience, had been a reliable guide. If it showed a steady tendency to become more rapid, it indicated the existence of peritonitis, and the sooner the operation were performed, the better. Each case should be studied by itself, and no case should be operated upon in the first attack unless the surgeon could be satisfied that pus was present. In many instances, long before this occurred, there were reliable signs pointing to the necessity of operating. It should be considered that the great majority of cases which had had one severe attack of appendicitis, would sooner or later have other attacks. He could not accept the rate of mortality given in cases of appendicitis, in which there had been no pus. According to the experience of good operators, the mortality should not be more than four per cent., provided the patient's kidneys and other organs were in good condition.

DR. CHARLES PHELPS, of New York county, said he agreed with the general views on treatment expressed in the paper, yet he thought, with Dr. Wiggin, that every case should be regarded by itself; it was not possible to establish general rules which should always be followed. The great majority of cases were simple catarrhal inflammations, in his opinion, and he believed many of them would recover with the use of the ice-coil, and with scarcely any other treatment. His experience covered a number of years, yet he could not say what had become of all the cases that he had allowed to go without operation. So far as he had been able to follow these cases, there had been no recurrence. If the case were gangrenous from the beginning, of course the earliest possible operation was the only chance for safety. If pus formed, the safety of the patient would be determined by the early discovery of the fact that suppuration had occurred, and the prompt decision as to when the operation should be performed. He believed that no operation was more often done unnecessarily than that for appendicitis. One reason for this was the very general discussion of the subject, not only in the medical, but in the lay, press. The majority of patients seemed to take pride in the fact that they had submitted to an operation for appendicitis. It was his opinion

that a pulse of 120 was always an indication of great danger. If the operation were to be done, it should be done before this degree of frequency had been reached. He was opposed, both in theory and practice, to the indiscriminate operations for appendicitis. He thought the majority of his cases had escaped without operation, and he did not think the majority of them had had a recurrence necessitating an operation at a later period.

DR. FERGUSON, in closing, said that perhaps he had stated the case rather strongly, but he had endeavoured to oppose the idea, that, given the diagnosis of appendicitis,—a positive conclusion as to the presence of the disease—that an operation should follow. He had operated in primary attacks, as all would do under certain circumstances, but his judgment was that between 80 and 90 per cent. of the cases of appendicitis would pass through the attack without any occasion for operating. Each operator must be his own judge as to the indications for operation. So long as he performed this duty conscientiously, well and good. What he wished to especially oppose, was the notion that *all* cases of appendicitis demand operation.

THE ABUSE OF MEDICAL CHARITY.—A CRITICAL REVIEW OF RECENT LITERATURE.

By FREDERICK HOLME WIGGIN, M. D., of New York County.

October 12, 1897.

In presenting this subject, it has been my object to place before you a critical review of the recent literature, rather than to present merely individual views. To the sociologist, there is, at the present time, no subject of greater interest, or one more worthy of careful consideration and study, than medical charity, or rather, of its abuse, as it exists to-day, and the remedy or remedies which must be applied for its correction, so that the greatest amount of good may be accomplished with the least harm to those who receive, as well as to those who give. It is only necessary to call attention to a few facts to demonstrate conclusively that, as at present administered, medical charity is demoralising to both recipient and donor, and that the charity spoken of in the Good Book has been completely lost sight of in the last quarter of the century now rapidly drawing to a close.

It was recently stated, in an editorial in a leading medical journal, that a person asserting that one third or one half of the inhabitants of this city are paupers, would be deemed a person of unsound mind; yet it has been said by Dr. Stephen Smith, in a report to the state board of charities, that, during 1895, 837,971 persons applied for, and received, free medical treatment at 105 dispensaries in this city; and that, during the same period, 1,418,847 free visits were made by these applicants to these dispensaries; also, that during the same year, 78,000 persons received free medical and surgical treatment, including free board, lodging, nursing, drugs, surgical dressings and appliances, making a grand total of 915,971 persons who claimed, in one year, to be

unable to care for themselves, out of a total of about 1,820,000, or something more than 49 per cent. of all who live within our borders. Doctor Smith has also been credited with the statement that, during the period from 1791, when the first dispensary was established in New York, to about 1870, the applicants for medical charity bore a ratio to the total population of only 1.5 per cent., against the present ratio of 49.7 per cent. Surely, these figures are alarming, if correct, and from the well-known reputation of their compiler for care and accuracy, there is no ground on which to question them. It is a significant fact that, about the time when this increased ratio began to be manifest was the period which witnessed the establishment of the so-called provident dispensary, both in this city and in London. Again, when we consider the amount of money expended each year in this locality for charitable purposes, it seems certain that something is wrong—either a larger number of our people are unable to help themselves than should be the case, or the public and private money contributed for this purpose is sadly wasted, or improperly spent on the undeserving.

The *New York Herald*, of June 6, 1897, contained an editorial, which in part said :

It is wholly within the mark to say that Greater New York spends \$50,000,000 every year on charities. The figure is stupendous, and the statement seems incredible, but a very little study not of results, but of official reports, will fully justify both the one and the other. In round numbers, New York proper, that is, the Lesser New York, devotes in the neighbourhood of \$2,225,000 to its own reformatories and charitable institutions. In addition to this, it appropriates nearly another two million to the independent asylums, hospitals, reformatories, and other aid societies. This makes the total of four million to begin with. To this may be added another two million, devoted to the same uses by other municipalities now comprised in Greater New York. This six million is only a mere fraction of the whole. There are, within the boundaries of Greater New York, over 3,000 institutions devoted to the help of those who cannot help themselves. Of these, but

very few receive and disburse less than one thousand dollars; the disbursements of many run far into the hundreds of thousands.

The recent action of the county medical society, with reference to the free dispensaries and the frequent hospital abuses, throws some light on the mystery as to where all the money goes. It shows very clearly that, in this feature of charity administration, money that is intended for the poor goes, in a surprising number of instances, to people who are not poor—to people even who comparatively are rich. The public dispensary, in other words, and the public hospital, where some generous philanthropist has provided for the poor essentially free medicines and free medical attendance, are either so loosely conducted, or so unwisely continued that they are working in the community a sort of social revolution. It is getting to be no longer medical attendance and medicines free for the poor, but free for all. If the poor can crowd into the throng of well-dressed men and women who crowd up in their carriages, there is no objection to their being served.

Millions upon millions of dollars have been given by benevolent New Yorkers in endowments and appliances for the free treatment of the ailments of the poor. It is conservatively estimated that fully 50 per cent. of the people who take advantage of this generosity, are people whose financial position puts them wholly beyond the scope of the charity; in other words, that 50 per cent. of the donor's money is diverted from the purpose for which he intended it, and practically filched from the poor to whom it rightfully belongs. Inasmuch as a very large percentage of the sums of money which New Yorkers give in charity every year is devoted to the care of the sick, afflicted and injured, it is obvious that these inroads of the well-to-do on the money provided for the poor alone account for a very large share of the failure with which New York's charitable efforts are met. The thousands of dollars in drugs, time and attention bestowed by physicians upon people who have no claim whatever upon either, would probably suffice to care for all the really legitimate cases of sickness and poverty in the city. If anything like a corresponding waste and misapplication of funds exists in the various other channels in which New York empties her fifty millions of dollars of gifts every year, it is not difficult to understand how so many of the helpless remain uncared for, while they starve in the midst of plenty.

The figures already quoted would seem to show that in the last twenty-seven years the ratio of those unable to care

for themselves out of our entire population, had increased by 47.5 per cent., and that it is only a question of time, if this state of affairs continues, before the great majority of the inhabitants of this metropolis will demand (for what is received as a gift to-day will be regarded as a right to-morrow) not only free medical service, but free food, free fuel, free clothing, and free lodging. As has been well said, are not all these things as requisite to promote comfort and prevent suffering as are medical services? A socialistic state will be reached, bordering upon anarchy. That this condition of affairs is not confined to our locality, is proven by recent reports of investigations, published in both the medical and lay press, to the effect that about 25 per cent. of the population of all large cities, both in this country and Europe, are at the present time receiving free treatment from institutions originally designed to serve the poor.

Some of the facts which have been rehearsed were presented last January to the New York County Medical Society, in the inaugural address of the president, Dr. Landon Carter Gray, and, as a result, committees were appointed from the county societies for the purpose of investigating the manner in which medical charities, but, more especially, the dispensaries, of this city are administered. A joint committee resulted. The whole matter was carefully investigated, and it was readily demonstrated that greater abuses existed than had been considered possible. It was found that little or no effort is being made to discriminate between the unworthy and the worthy, and that, practically, all comers are welcome, and receive treatment, regardless of their financial condition, at nearly all of the one hundred and sixteen dispensaries located in this city.

Dr. J. B. Huber, in an able paper on "The Abuse of Medical Charity," recently read before the alumni society of the city hospital, graphically describes the clientèle of some of these so-called charitable institutions. He says:

True, he will find there the worthy poor, the worthy object of charity, but he will find there also, in at least equal number,

quite another sort of patient; he will find the actor, the opera singer, the gambler and bar-tender, and hobnobbing amicably with these, the policeman and the clerk, and the young man who earns a respectable salary; he will find the farmer from out of town, the man who owns houses, and the prosperous business man; he may find there the broker, the lawyer, the journalist, the bicycle girl, the man who wants to know if his disease will interfere with horseback riding, and the lady who has left her barouche around the corner; and he may even run across a street-railway president. Besides these, he will find there those who, at considerable preliminary expense, exhibit upon their faces the penalties which Venus inflicts upon her too ardent devotees, and he may find there also the demimondaine, with the rich backer, who, it is rational to infer, receives as much money in a night as many a medical man in the city earns in a month in the practice of his profession. This does not by any means exhaust the list.

Again, Dr. George F. Shrady, in the course of an elaborate and instructive article, entitled "A Propagator of Pauperism: The Dispensary," published in the *Forum* for June, describes the scene which may be witnessed daily at the institution to which he has given the soubriquet of "The Diamond Dispensary." He says:

The reception-room held about two hundred at a time; nobody was turned away; fully fifty per cent. of the applicants were well dressed, and ten per cent. were finely dressed. Three women wore fur coats that had not been handed down from somebody else. There was an attractive display of fine millinery, and the men, more than half of them, bore no evidences of poverty. But all obtained free treatment, supposed to be given to paupers—poor persons. Such instances as the following carry with them their own moral. During the examination of a dispensary patient, a roll of bills dropped from her pocket, and the doctor picked it up, and remarked; "Madam, this is a free dispensary, and as you are able to pay a fee for medical advice, I must decline to treat you here." "Well," replied the woman, "that money is for something else; you are paid by the city, and must prescribe for me." On being assured that the doctor received no salary from any source, the patient became indignant, and protested that she was entitled to attention equally with the lady who had preceded her, and from whom she had rented her house a week before.

The *New York Herald* of June 19, 1897, in the course of an article describing the visit of a reporter to a well known clinic, said:

It was stated in the clinic that during the hours named the number of patients was sometimes as large as five hundred, and that the attendance on yesterday was up to the average. There was certainly a continuous stream of men, women, and children coming in, and, at a rough and conservative estimate, the total must have been very nearly four hundred. No one was seen to arrive in a carriage, nor was any finely dressed man or sumptuously attired woman observed in the crowd, but, on the other hand, those whose dress and appearance denoted an extreme degree of poverty were certainly in a very large minority. The common, unsophisticated idea of a dispensary patient probably is a person who, if he is not a pauper, is next door to one, a person whose earnings suffice at most to do no more than keep a poor shelter over his head, a poor covering upon his back, and enough poor food in his body to prolong life—in other words, a person actually so destitute that medical attendance and medicines must be given to him outright, or for the merest pittance, or he must go without them. This may not be a correct definition of a legitimate dispensary patient. If it is, it is difficult to resist the conclusion that not more than one in twenty-five—the pen is tempted to write, one in fifty—of the applicants treated at the — clinic yesterday afternoon was a legitimate patient; not more than one in fifty was at all shabbily dressed; a large majority were fairly well dressed; one third of them, it would be safe to say, were quite presentably dressed; a few, perhaps as many as one fifth, dressed positively well. Much the greater number of the patients were women.

The following are a few instances out of many of the abuses of medical charity which have come under the writer's personal observation. A number of years ago, while serving as a district physician to an up-town dispensary, he was called to see a baby who was too ill to be brought to the institution. Upon reaching the abode of the little patient's parents, he was surprised to find evidences of prosperity rather than of adversity, and as he entered the door, a well-dressed man walked out. On being questioned, the mother said that the man was her husband; that he had

plenty of work and good pay, and that the reason she had sent to the dispensary for a doctor was because every other inmate in the house had a physician for nothing whenever they needed one, and she thought there was no reason why they should send for a pay doctor.

More recently, the case of a man came to my notice, who lives in one of the largest and finest apartment-houses in the west side of the city, not far from Central Park, and who pays several thousand dollars a year for rent, and who expends many thousands for living expenses. Requiring some special advice, instead of going to the office of the specialist he wished to consult, he went to his clinic, at "the diamond dispensary," saying to his wife that he could not afford to pay a fee to the doctor, as his expenses were too heavy.

Another instance was that of a wealthy and prosperous manufacturer, who lives in a thriving town not more than a hundred miles away, who, having some nasal difficulty, wished to consult a specialist at his office, but did not desire to pay the doctor's usual fee. He, therefore, borrowed some clothes from one of his employees, and presented himself at the doctor's office. When admitted to the physician's presence, he regaled him with an account of the difficulty of earning a living, and supporting a family. After examination, it was decided that an operation would be necessary before the patient could experience relief. On account of assertions as to limited means, a very small fee was asked for the operation, but when it was named, the patient said that he could not possibly pay it, but could pay half the amount. This was accepted, and the operation performed. The patient experienced relief from his difficulty, and has since frequently narrated this story as a good joke, and as showing the limited business knowledge and acumen of physicians. The moral turpitude involved in his action was entirely overlooked.

In an article entitled, "From Him That Hath Not, or, How the Rich Rob the Poor by Getting Medicine and Treat-

ment at Charity Dispensaries" by Winnifred Black, in the *New York Journal* of July 11, 1897, it was stated:

I saw well-dressed and well-fed women coming and crowding the wretched suffering of poverty from the door. Some observer, upon asking one of the well-dressed women why she frequented a place intended only for the relief of poor persons, received this reply: "If other people get medicines for nothing, I guess I can." Another reply to a similar question, addressed to a prosperous looking girl, was: "Spend money for doctors when I can buy ribbons with it? Well, I guess not!" And again, a smart, prosperous business woman's answer as to why she came for free treatment was: "Aint I a widow with a child to support?"

It would seem to be needless to multiply illustrations of what is daily occurring, for the instances quoted certainly show the spirit in which charity is asked and accepted; it is largely a desire to save money, without apparently thinking that self-respect is lost in the effort, or that a wrong is done to the really poor and to the physician, who is certainly as much entitled to his hire as is the clergyman or other members of the community, as he, too, has social obligations to fulfil.

Dr. Schweck, in the *Philadelphia Press* of June 11, 1897, in the course of a paper entitled, "The Dispensary, and the Abuse of the Poor," says:

The woman who makes shirts for a dollar a dozen, the girl who stands behind a counter for four dollars a week, and the scrub-woman, with others dependent upon her, who gets a dollar a day, all constitute our worthy poor. They have themselves and others to board and clothe; their time is worth more to them than that of the most successful business men. These are the people that are eligible for dispensary service, and should have the very best that can be given them. Here to this place of charity comes also another class, a distinct class, the moral and lineal descendant of the ghouls, who follow in the wake of the army and rob the fallen soldiers; it is a class of people who constitute the vanishing point in the perspective of human affairs; they have money, but that is all. People of means who go to charity dispensaries and receive treatment free of charge, representing themselves to be too poor

to pay for medical services, commit a criminal act, for they obtain what they are not entitled to, and do it under false pretenses.

Referring to the abuses of medical charity in other cities, the *New York Times* of August 16, 1897, says:

Hospital abuses in Chicago must have reached a point calculated to astonish even those New York doctors who have been so vigorous and persistent of late in denouncing the similar wrongs that exist here. From a single Chicago hospital 245 undeserving recipients of charity have just been rejected; some because there was little or nothing the matter with them excepting a yearning for free food and lodging, and the rest because they could well afford to pay for the services of the private physician. The patients of the latter class are numerous enough here, but, as far as known, New York hospitals have not as yet become the resort for tramps to the extent to justify their name by tramping.

It is the writer's belief, founded upon his experience in the local hospitals, that a careful investigation of the inmates would reveal a similar, if not worse condition of affairs here.

In the *New York Times* of October 12, 1897, Superintendent Bauer of the Department of Public Charities of this city is credited with having reported to the Board a saving of \$1,313,471 in fifteen months as a result of investigations into the claims of the inmates of the various private charitable institutions receiving city aid. The bills of the institutions referred to showed that 26,561 persons were being supported, and the investigation demonstrated that 13,285 of these were unworthy objects of charity.

An instance cited by a commissioner as evidence of the necessity of making a careful inquiry into the claims of applicants for relief was that of a boy whose name had been carried for seven years on the books of an institution as a city charge, and \$104 collected annually from the city for his support, whereas, he had in reality been living on a farm during this period of time.

The *Lowell* (Massachusetts) *Mail* of September 23, 1897, referring to the same subject, said:

Boston is having trouble with abuses of free dispensaries, as New York and other large cities have had for some time. So many rich patients go to the dispensaries that the poor, who really need the dispensaries, are crowded out, and the struggling practitioners, who really need rich patients, are crowded out, too. Stories have been told of people driving in carriages to the doors of the dispensaries to receive treatment gratis, all of which goes to prove what has often been stated, that those who are willing to ask for charity are not generally those who need charity the most.

The latest form of dispensary abuse has recently been reported in the *Medical Record*, which says:

A report comes to us, as we are about to go to press (as the county weekly puts it) to the effect that a physician has been dismissed from one of the most fashionable dispensaries in a neighbouring city—of course, it could not occur in New York—for abstracting a fifty-dollar bank-note from the purse of a patient. The pocket-book was left upon the dispensary desk, while the lady entered the adjoining room to prepare for examination. The plea made to the governing board by the physician was, that he had been overworked, having treated over four hundred patients in the dispensary for the three days preceding the temptation which caused his fall, and during this time he had been unable to procure but one full meal. Hunger, and the means at hand to feed it, may have proven too strong a combination for his overwrought nerves. This, naturally, did not weigh with the Board. The clientèle of the institution must be made to feel that while the patron is undergoing treatment, his valuables are safe. The argument was used by one of the governors that, if the patients' money is to be taken from them they might as well go to a physician's office and be done with it. The crime of robbing a dispensary patient cannot be too severely punished, as such acts will deter many patients of wealth from patronising these institutions. It is, therefore, most fitting that the culprit in the present instance will be forced to take his chances for the future in private practice.

It is a well-known fact, that ever since the world began man has been seeking to obtain something for nothing, or without effort; and it is equally agreed that this is an immoral desire, and ends in disaster to those who indulge and practise it, as well as to those who aid and abet. From

the evidence already adduced, it cannot fail to be seen what an injurious work the indiscriminate, so-called medical charity of the present time is doing, and that its tendency is to corrupt individuals and pauperise whole communities. The receiving of free treatment by those who are able to pay actually robs the poor, as only a limited number of persons can receive proper attention.

Dr. G. M. Rowe, medical superintendent of the Boston City Hospital, in a communication to the *Boston Herald* of June 12, 1897, said :

It is a generally accepted fact among people who have had large experience in doing charitable work, that the first thing that a man or woman will accept as charity is medical attendance. They will accept free services of a doctor when you could not prevail upon them to accept rent or fuel, or anything of the kind, as a gift. The acceptance of gratuitous medical attendance is the first step towards pauperism. There is already a tendency towards what is generally known as "nationalism," a belief among the common people that the city and the state owe them a living, and that medical attendance, among other things, should be furnished them by common taxation, regardless of their financial standing as individuals.

Dr. J. J. Stevenson, in the course of a communication on this subject to the *Mail and Express* of May 20, 1897, says :

One cannot shut his eyes to the terrible injury done to the poorer people by this perversion of trusts. If food be abundant and obtained without labour, it is wasted; if money be obtained without labour, it is wasted; easy come and easy go applies in both cases, and equally so to health. If recovery from disease be secured at the expense of self-denial, the memory of the cost will lead, in ordinary cases, to care that recurrence of disease and attendant expenses may be prevented. But if the careless feel that treatment, medicine, and even diet can be had simply for the asking, there can be no reason for resisting the natural tendency to neglect the laws of health. The indiscriminate medical charity is but one phase of the morbid philanthropy which seeks to be doing something which appears to be good—a philanthropy which has done much to degrade men; it has done much to increase the

disaffected class, and has been the efficient ally of the social agitator. The thoughtless charity of 1873 did much to give America the tramp; that of 1883, increased the horde; that of 1893 and 1894, in this city, converted great numbers of worthy families into mere receivers of alms, who soon lost self-respect and turned upon their benefactors with bitter reflections upon the charity that could provide such food and such clothes. Discontent no longer mutters, but speaks so boldly that the politicians are dismayed while the demagogues exult. The rights of ownership in property are denied because a *proletariat* exists. We are told again and again that the rich have acknowledged themselves as responsible for the wretchedness of the poor, having provided food and clothes in time of need, having established hospitals, dispensaries, and diet-kitchens for the sick, and distribution having been made in great part without careful inquiry as to the absolute need, and not requiring anything in return. It is not surprising that the reckless poor see in such careless giving an acknowledgment of the unequal distribution of wealth, and believe that it is founded on injustice; nor is it strange that the anarchist's cry is not for opportunity to earn by labour, but for such distribution of wealth as may enable all to enjoy the luxury of idleness.

Another physician, writing on this same subject recently in the *New York Evening Post*, said:

And there is another side to the story also. The free dispensaries, which are such worthy charities in theory, have, through several causes, become dangerous menaces, not only to us, but to society in general; they absolutely encourage begging and dependence on charity. People who can well afford to pay for their treatment, and for medicines, have become so hardened that they will stand in line to receive their drugs for nothing; they will be indignant if it is suggested to them that doctors cannot afford to give them aid for nothing any more than any other class of men. It seems to them that we are employed by the city to help them, and in many cases they are not even grateful. Think of a dry-goods man who would be compelled to open his doors to a trade, and devote sometimes a day to dispensing his goods to them—even if the goods were paid for, his time would be lost. Where is the justice in making a distinction between the doctor and the merchant?

Dr. Douglas Hunt Stewart, who has made a careful study of the subject of dispensary abuses, in the course of a communication to the *Tribune*, says ;

The financiering of many medical charities gives the impression that it is proper for a citizen to receive something for nothing. This is the teaching of socialism, which the *Tribune* has always opposed, and it is the code of the counterfeiter. The question of right does not enter into the matter at all. Legally, no man has a right to steal a loaf of bread to feed his starving family; there may be mitigating circumstances, but the law brands such an act as theft. Is he any less guilty who steals a physician's services under vague pretenses? The only man who claims the right to receive alms is the highwayman, who puts a pistol to your head and exclaims: "Your money or your life!" Another class of recipients of charity may be compared to the street beggar who simply asks for money, and trusts to effrontery and persistence to obtain it. The third class would be the deserving poor, whom every one wishes to help, but who are too timid or too proud to avail themselves of the aid provided. This last class the dispensary often treats with scant courtesy, and deprives them of time and services necessary for the relief of their ills. It may be as hard for the worthy to raise the ten or twenty cents demanded as for the moneyed pauper to raise as many dollars, yet the latter is the persistent seeker for free treatment, to the detriment of those for whom the dispensaries were founded.

Again, in the course of an editorial in the *Evening Sun* for May 26, 1897, entitled, "The Physician and the Dispensary," it was said :

Leaving the physician and the fee out of the question, surely it is right that the medical attention offered the needy should not be claimed by others. Many of the hospitals and dispensaries intended for the relief of the poor, are supported by public money and private gifts which should not be devoted to those who can pay for medical advice. To permit, knowingly, such an abuse, is entirely indefensible, and is in the nature of a breach of trust. It is, besides, an encouragement to fraud, and an incitement to that system of getting something for nothing which may be termed "dead-beatism," and therefore it is immoral. The most extreme form of socialism when compared with the use of free hospitals by the well-to-do is laudable and commendable.

From what has gone before, it appears that not only is medical charity abused in all large cities, but that this abuse is encouraged by loose and careless methods, if not from worse motives. The writer has been frequently told by physicians connected with dispensaries that they were well aware of the fact that well-to-do persons applied for free treatment, and that they were not sent away because it was known that if they were turned off they would go to a rival concern and receive the desired treatment there. Consequently, all other things being equal, they preferred to have as good a class of patients as possible. We have seen, as Dr. Colton has said, "that some patients are impelled to apply from a desire to save money at the expense of self-respect; others, while paying for the treatment of ordinary diseases, think they cannot afford the fees of specialists; while another class is made up of persons sent to hospitals by physicians who do not care to operate; and a fourth class consists of taxpayers, who imagine that they have a right to resort to institutions which they help to sustain."

There can also be no reasonable doubt that we physicians, as well as the managers of dispensaries, are responsible in many ways for the existence of the present lamentable conditions.

In the writer's opinion, the first step which should be taken towards remedying the existing abuse, should be an effort to educate the laity to believe that medical professional services have a pecuniary value, and that it is morally wrong for those able to pay even a moderate fee to try to get these services for nothing.

It would be a great aid in this direction if physicians connected with charitable institutions, in whatever capacity, were paid for their services. There certainly appears to be good reason why they should, and none why they should not, be compensated. In connection with this subject, I will quote the following extract which appeared some time since in the *Evening Post*:

There is no more reason why the medical services rendered by the house staff should go unpaid than there would be for trying to get for nothing nurses, attendants, rent, coal, milk, drugs and druggists, clerks and superintendents. The labourer is worthy of his hire, and if a thing is worth having, it is worth paying for. The physicians of this city are subjected to as deleterious a sweating system as any body of east-side tailors.

It has come to the writer's notice, a number of times within the last few years, that members of the house staff of the hospital, of whose visiting staff he is a member, though bright and well-educated young men who have secured their positions by reason of passing successfully a competitive examination, have been obliged to resign because they were only supplied with board and lodging for six months out of the eighteen months which the service calls for—they were unable to provide for themselves. There is certainly something wrong with a system which makes such sacrifices necessary, especially where a man is required to be constantly employed in the city's interests from 9 a. m. to 5 p. m.

A law should be passed, similar to that introduced by the joint committee already referred to, and which was passed unanimously by both houses of the legislature on April 14, 1897, but which failed to receive the signature of the executive. This bill would have placed all institutions which dispense medical charity, in this state, under the direct care and supervision of the State Board of Charities, and through them of the local board. These local boards should investigate the financial condition of the applicant. Of course, emergency cases should be treated at once, and investigated afterwards. In speaking of this bill in its editorial column on May 26, 1897, the *Evening Sun* said:

With regard to the physician's attitude toward the abuse which the County Medical and other societies are fighting, some consideration is due him. Much of his labour and time are given gratuitously. Some of his patients are never able to pay him, and he does not press them for payment, in which respect he is unlike the lawyer, who seldom fails to get his own. Others of his

patients, it may be added, refrain from paying him so long as payment can be deferred, or even defraud him. Public opinion will, therefore, support the physician in his contention that the well-to-do patients of free hospitals are morally bound to go to him for advice.

In speaking of the investigation of the applicant for medical charity, the *Boston Herald* of June 12, 1897, said:

In Boston, at present, the instances of the abuse of medical charity appear to be far fewer than in New York or London, but it is none the less a fact that in this city, as elsewhere, there is reason for reform. This, it has been suggested, may be accomplished by two methods—popular education and more stringent regulation for the admission of applicants for hospital and dispensary treatment. If the people are more fully informed as to the investigation which each case receives before admission to the hospital, and if that investigation involve always something more than the mere statement of the patient that he or she is unable to pay, there would probably be fewer applicants for free treatment, and the private practice of physicians would be increased. Not long ago, a man was operated upon gratuitously in one of the city hospitals, and was cared for also without charge in a ward for several weeks after the operation. He had declared his inability to pay for his treatment. The doctor who attended him realised the seriousness of the case, and devoted all his energy and skill, as well as a great part of his time, in effecting the cure. About a week after the patient was discharged, the doctor received a letter of thanks from him, and an invitation to visit him in New Hampshire, and enjoy a few days of woodcock shooting. The writer enclosed a photograph of his home, which the camera depicted as a finely kept country house, with a large stable in the rear. The lawn was ample and closely trimmed, and in the foreground of the picture several handsome horses were being held by stable-boys. The doctor did not accept the invitation, but he keeps the picture where he can see it, as a constant reminder that “all things are not as they seem.” In this case, cream masqueraded as skimmed milk.

Dr. F. T. Roger, of Providence, R. I., in a practical and instructive paper read before the American Academy of Medicine, at Philadelphia, on “The Results of a Year’s

Experience in Endeavouring to Lessen the Dispensary Abuse in the Rhode Island Hospital," said:

The method adopted was to prominently display at the entrance of the dispensary a large placard, stating that the services of the dispensary were given only to such patients as were too poor to pay, and that no others would be treated. There was the same statement on the case-card given the patient, and as a presentation of the card was an essential for admission, this fact was forcibly impressed upon all applicants for gratuitous service. Exceptions were made to this rule in emergency cases, such as recent accidents, cases of sudden illness and cases in which a doubt existed as to the ability to pay, and where delay in treatment would work hardship; and to the ignorant foreign classes, who could not understand hospital rules. The plan has been successful, and during the year 1,032 applicants were rejected, thus weeding out 41 per cent. of unworthy applicants. The receipts of the hospital have been the same, and it is unfair to conclude that the hospital is in any sense poorer; it has done less work, and has done quite as much in relieving suffering among the deserving poor. Those who failed to come, having a real ailment, must have consulted a physician, and presumably paid for his services.

The above plan was also advocated by Dr. Emma B. Culbertson, in a recently published article in the "Bulletin of the American Academy of Medicine."

It should be made a misdemeanour, punishable by a fine, for any one to receive free medical or surgical treatment by reason of false representation as to his financial condition, and applicants should be required to sign a printed slip declaring their inability to pay. By so doing, if they prove upon investigation to be amply able to pay for what they have received, they have thus incriminated themselves by declaring over their signatures that they have obtained by false pretense that to which they were not entitled.

Charitable institutions should not be allowed to charge nominal sums for medical and surgical treatment, nor should they make any charge for medicines or appliances, as such charges seem to ease the public conscience, and make the individual believe that he is paying his way, and, therefore,

has a right to go. It has recently come to the writer's knowledge that a lady, living in a large and fashionable apartment house, visited the dispensary located near Fifth avenue, and where a charge of a dollar a month is made. Upon being taken to task by a friend for having visited a place intended for poor persons, the lady replied that, needing a specialist, and not knowing where to procure one, she had visited this dispensary and had paid all that she was asked; and that if the fee had been twenty dollars instead of a dollar, she would have willingly paid it.

Dr. Douglas H. Stewart, in a letter to the *New York Tribune*, dated June 2, 1897, on the subject of the breach of trust funds involved in present methods of management, said :

We desire to see that money left to institutions by will for specific purposes is applied in accordance with the intention of the donors. We believe that the bill endorsed by the medical societies and favoured by the State Board of Charities was a move in the right direction to do away with very great abuse and injustice to the over-burdened tax-payer and the needy poor, and that it should have received the approbation and assent of the governor. The State Board is not the representative of the medical profession alone, but of every person, be he donor or receiver of alms; it is the accredited and legitimate guardian of funds now squandered through unreasoning sentiment for the exploited and uninvestigated needs of the unrelieved poor.

Summary.—(1) That medical charity, as at present administered, is an unqualified evil, and is seriously menacing our existing social conditions; (2) that the application for free treatment of those able to pay the physician a moderate fee for his services, robs the poor; (3) that all medical charitable institutions should be under the direction and control of state and local boards of charities, who should have the power to enforce their rules; (4) that all applicants for medical charity should be investigated by local charity boards, and the unworthy excluded; (5) that no medical charitable institution should be allowed to charge nominal sums for medical or surgical service, nor should

they be allowed to charge for medicines or appliances; (6) that all physicians connected with charitable institutions should be paid for the service which they render; (7) it should be made a misdemeanour, punishable by fine, for any person to receive free medical treatment by reason of false representations as to financial condition; (8) that no state or city aid should be granted to private medical charities; (9) that the financiering of many medical charities involves, as at present conducted, a breach of trust.

APPENDIX.

COPY OF THE DISPENSARY BILL.

STATE OF NEW YORK.

No. 1797,2556.

Int. 1331.

IN ASSEMBLY,

March 17, 1897.

Introduced by Mr. J. J. Sullivan; read once and referred to the committee on affairs of cities; reported from said committee and placed on the order of third reading; amended on third reading by a substitute bill; ordered reprinted and referred to the committee on revision.

AN ACT

Relating to and defining dispensaries, requiring them to be incorporated or licensed, forbidding their establishment in a "drug store" or a "tenement-house," providing that the word "dispensary" shall only be used in connection with an incorporated or licensed dispensary; that persons shall not obtain relief from dispensaries by false representations, and that a violation of this act shall be a misdemeanour; also empowering the state board of charities to make rules and regulations and to annul or suspend incorporations and to revoke licenses.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION 1. By this act a "dispensary" is defined to be any institution, agency or place, society or association, whose actual or alleged purpose it is to furnish either gratuitously, or at a merely nominal price, to indigent, needy or other persons not resident therein, medical or surgical relief, advice or treatment, medicine or orthopaedic or other like appliances.

SEC. 2. On or after the first day of October, eighteen hundred and ninety-seven, it shall not be lawful for any one to establish, conduct, or manage at any place in this state, a dispensary not duly incorporated as such under the laws of this state, or not connected with another incorporation and licensed by the State Board of Charities.

SEC. 3. In no case shall a dispensary be established, carried on, or conducted in any place in this state commonly known as a "drug store," nor in any place or building in the state defined by law or by an ordinance of a board of health as a "tenement-house."

SEC. 4. It shall not be lawful for any person or persons to display the word "dispensary," or to cause the same to be published in any form or in any manner in order to attract any indigent, needy, or other person to any dispensary not duly incorporated or licensed as provided in section two of this act.

SEC. 5. Any person who shall by means of any wilful false representations on his or her part, obtain at any dispensary medical or surgical relief, advice or treatment, medicines or orthopaedic or other appliances, or any person who shall wilfully violate any of the provisions of this act shall be guilty of a misdemeanour, and upon conviction, shall be required to pay a fine of not less than fifty nor more than two hundred and fifty dollars.

SEC. 6. The State Board of Charities is hereby empowered to make rules and regulations and to alter and amend the same when, in its opinion, necessary, in accordance with which, indigent, needy, or other persons shall be given medical or surgical relief, advice or treatment, medicines and orthopaedic or other like appliances by such duly incorporated or licensed dispensaries, and the said board is hereby empowered, a chance for a hearing having been given, to annul the incorporation, or suspend the operations or to revoke the license of any dispensary for wilful neglect or failure on the part of its managers, trustees, officers or em-

ployees to comply with the rules and regulations so established by said board; but nothing in this act contained shall be construed to mean that said board shall have power to determine the particular school of medicine under which the dispensary shall be conducted.

SEC. 7. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

SEC. 8. This act shall take effect on the first of October, eighteen hundred and ninety-seven.

DISCUSSION.

DR. WICKES WASHBURN, of New York county, opened the discussion. He said that he had given a great deal of attention to this matter, as some of the members knew. The first case of extreme abuse of medical charity that he had noticed had occurred as far back as 1883. He had had the case investigated by the Charity Organisation Society. The case came to him from the old Marion Street Lying-in Asylum. The lady was found to own a house in Seventy-second street, between Madison and Fifth avenues, on which there was no mortgage.

Dr. Washburn exhibited a book, kept at the Charity Organisation Society, in which were recorded certain facts about which he had desired information. Only a few of the cases had been investigated. In January, eighty-one cases had been investigated, and forty of these had been found unable to pay—a trifle over 50 per cent. being able to pay. In February, ninety-five cases had been investigated, of which forty-six had been found unable to pay. In March, fifty-five had been investigated, of which nineteen had been able to pay. In April, seventy-five cases had been investigated, and forty found unable to pay. In May, only eighteen cases had been investigated, of which eight had been found unable to pay. In June, fifty-seven cases had been investigated, of which twenty-six had been unable to pay. In July, twenty-five cases had been investigated, and seven found unable to pay. In August, nine cases had been investigated for the out-departments of different hospitals, of which five had been found unable to pay. In September, fourteen cases had been investigated, of which 90 per cent. had been found able to pay. From October 1st to 11th, fourteen cases had been investigated, of which five had been found unable to pay. This made a total of 443 cases, of which, in the judgment of these investigators, 289, or a trifle over 55 per cent., were in condition to pay reasonable fees.

It must be said that these investigations were made for ten different dispensaries and out-door departments of hospitals. The number of cases sent in varied a great deal from month to month. Of course the 443 cases from January 1st to October 15th, represented only a very small percentage of the people treated at the various dispensaries and out-door departments. It would be seen that these cases were selected because it was thought by those sending them in to the society that they were able to pay, and consequently a less percentage would be shown if all the cases were investigated. There were to be found in the book, for example, such notes as these: "The man owns the house." "Address of the woman not correct, but having found the business address of the husband, it was learned that the woman was able to pay, and that the husband was very much dissatisfied to learn that his wife had gone to the dispensary for treatment." There must, of course, be some central bureau from which this work could be done, otherwise it would have to be done over and over again.

It might be asked how the Charity Organisation Society was able to arrive at a conclusion regarding the ability of the applicant to pay. The head of the bureau had given him the following points, which the investigators had taken into consideration, viz.: (1) Total income of the family; (2) the number in the family; (3) the ages of the children (whether old enough to work); (4) if any out of work, and how long; (5) if working, what would be the wages paid; and (6) general impressions of the visitors. These investigations were made by different investigators all over the city, and the final result was arrived at at the central office.

The joint committee of the different societies, referred to in the paper, had been largely instrumental in the passing of a bill through both houses of the legislature last winter, but it failed of securing the signature of the governor. The bill had been attacked as unconstitutional, because the State Board of Charities was given so much power. It had occurred to him, and to some others on that committee, that it would be well to add a little to one section of the bill. Section six empowers the State Board of Charities to enforce and amend the rules of the various institutions regarding free treatment, and to revoke the license (after a hearing) of any dispensary for wilful neglect to comply with these regulations. He would therefore add to this section, that the approval of a judge of the supreme court, sitting in the county where such failure to comply with the rules had occurred, shall be required, before steps can be taken to annul the charter or revoke

the license. This addition, he thought, would make the provisions of the bill such as would aid largely in doing away with the abuse which had been so ably presented this afternoon.

JOHN HARSON RHOADES, Esq., continued the discussion. He said that it gave him pleasure to be able to discuss briefly this question, which was so vital to the interests of the people of this city, as well as of the whole country. It was a subject to which he had given his own attention for a number of years, because, fortunately for himself, he had from early manhood been connected, more or less, with charitable institutions in New York city. He had had the great honour of having an uncle who had taken great interest in the charitable work of this city, and at the death of this uncle the speaker had been elected to positions that had brought him directly in contact with the subject of the great charities of this city.

He wished to say right here, that he would criticise sharply the medical profession. He honoured that profession, and knew that the charitable medical institutions of New York city were dependent upon the work of physicians; others connected with these medical charities had to lean directly upon the medical brethren. The work of the dispensary was one which brought the physicians themselves directly in contact with the patients, and the recommendations must come from the medical profession. The boards of directors were powerless to do anything. Most of the charitable institutions had no means for the establishment of a bureau for the investigation of the applicants.

Now, what were the causes of this trouble? The first cause, it seemed to him, was the great multiplication of medical work of this character in New York city;—there were too many hospitals, dispensaries, and private medical institutions. The result was, that if these people were turned from one institution, they could easily find admission to another. For this reason, the suggestion was a good one that this matter should come before some central body, like the State Board of Charities.

Some months ago, the Rev. Dr. Greer, a noble worker in New York city, who had established a dispensary in connection with his church, was terribly indignant because he could not get a charter for it. The truth of the matter was, that the institution was no more needed in this city than fifteen or twenty hospitals were needed. This great and good man was actually, though unconsciously, creating pauperism.

What did this great multiplication of charities arise from? (1) It was the ambition of young medical men to attach themselves to institutions already in existence, or to connect themselves with new institutions out of which they expected to make reputations and, eventually, a living. He would ask his hearers if this were not strictly true. It was done, not for charity, but to build up a reputation and earn a living. (2) The next cause was the difficulty of determining who were poor, and who were able to pay. The natural repugnance to close inquiry, for fear of driving away those really entitled to aid—the honest poor—was what prevented a disclosure of the true condition. This was a natural repugnance, felt by both lay and medical persons. (3) Another cause was the secret willingness of many young practitioners to conceal facts coming to their knowledge, showing the patient's ability to pay in the hope of securing such persons for private patients. Those men did not differently from what was done in the ordinary walks of business life, and no harm was meant by it, and yet it was done constantly. (4) Another cause was to be found in the absence of a clearing bureau where all cases and applications for charitable relief of all kinds, medical or otherwise, could be investigated for the benefit of all charitable institutions, of all classes and sects. Boards of trustees had been blamed for carelessness and neglect in this direction, yet in a long experience he had been unable to see how the evil could be remedied by such boards in view of the evils existing on the medical side.

The remedy, to him, seemed to lie in the careful selection of young physicians for services in medical institutions and hospitals, and in the enforcement of business principles which would compel the dismissal or resignation of those who proved incompetent, dishonest, or self-seeking. For example, the medical board appointed their assistants, and were not always able to judge of the fitness of the candidates for these positions. A business man would quickly rid himself of incompetent and careless assistants, but the medical profession did not do that. He had found such great unwillingness on the part of medical men to censure any one in their profession that they preferred to bear in silence. This remedy must be applied by medical men by the enforcement of well-recognised business principles. He had met with numberless cases exemplifying this fact. This had more to do with the question of medical charity abuse than many imagined.

He believed there was need for the passage of a law which would compel all charitable institutions of every kind to establish

a clearance bureau. This could be easily done in connection with the Charity Organisation Society. Each institution should share the expense of the bureau in proportion to the number of patients recorded against each. Such a law would compel these institutions to send lists weekly to the central bureau for investigation. It was his honest belief, that such a bureau, once in operation, would disclose an amount of fraud, upon the part of thousands now receiving alms, that would be simply appalling. This would probably reduce the number of those applying for charity to half of the present number. When medical and lay boards did their duty, without fear or favour, and the state did its duty regarding the proper investigation of applicants, regardless of sect, the evil would be, in his judgment, remedied, and not before. The true welfare of the commonwealth demanded this, for in the present state of affairs we were speedily building up a nation of paupers.

DR. J. E. JANVRIN, of New York county, said that he most heartily concurred in the conclusions presented in the paper of Dr. Wiggin. The County Medical Society and Association, together with the public press, had succeeded during the past year in creating, upon the part of the public, some disposition to remedy this evil. The joint committee had carefully gone over all the points brought out so far in the present discussion, and the bill which passed both houses of the legislature last spring seemed at that time to embody the best means of doing away with a large amount of indiscriminate charity—not true charity, but work having a decidedly evil tendency. It was expected, of course, that the governor would sign this bill, but when the signing of the bill was postponed day after day, a joint committee was appointed to wait upon the governor in regard to the bill. This committee had a very brief interview with the governor, and explained to him that the profession at large, and the community at large had full confidence in the State Board of Charities, and that therefore this organisation was the one which should take charge of this matter. The governor said that he objected to the bill because it gave too much power to a single association; that the State Board of Charities should not have so much power delegated to it. That seemed to be a fair ground for a difference of opinion. But he also made the point that, in his opinion, any one who was wealthy had a perfect right to establish institutions, medical or other charity, to educate young men, rich or poor, without any fees whatever, if necessary, even to assist them afterwards in

obtaining business. Dr. Janvrin said that this had seemed to him a very strange proposition, and he had accordingly asked the governor whether he would have liked such a condition of affairs to have existed when he was a young lawyer. His reply was: "As a *lawyer*, I should object to it." This was the extent of the interview.

Dr. Janvrin said that he thought that if the people at large were willing to leave this matter in the hands of the State Board of Charities, there should be no great objection to its being done. Regarding the points made by Mr. Rhoades, he said that it could not be denied that there were too many dispensaries, and that young medical men were too anxious to gain positions in these medical charitable institutions. He had long believed that hospitals and dispensaries should be conducted on true business principles, and that, for the same reason, the medical officers of these institutions should be properly remunerated for their services. He believed that if this were done, and a proper "clearing bureau" were established, there would be very little indiscriminate or misplaced charity.

As to the addition to the dispensary bill suggested by Dr. Washburn, it seemed to him that it would give rise to much annoyance and many contentions. He was of the opinion that the matter should be solely in charge of one board, and that the State Board of Charities.

DR. WASHBURN explained that some people believed that they would be too much in the hands of the State Board of Charities, and while he did not believe there was any occasion for such lack of confidence, he was willing to make any reasonable concessions. He only proposed that the same lines should be followed out in this matter that had been followed out in connection with the commitment of the insane.

MR. RHOADES said that he had been an advocate of a paid staff in all of these institutions, but there was one principle embodied in a paid staff which should be very carefully adhered to, and that was that the physicians, from a certain grade downward, should only be permitted to remain a certain length of time, otherwise the bright men would soon leave the institution.

DR. FERGUSON said that this question did not make such a strong personal appeal to the medical profession and the citizens throughout the state as it did in the city of New York. It was perfectly apparent that the abuse of this kind must reach a rela-

tive magnitude in New York city which it would not reach in any other portion of the state, except perhaps in the city of Buffalo. In his own city, Troy, they did not have this question to contend with at all, yet he could not fail to see the injurious influence of such abuse of charity. However, he could also see legal objections to the dispensary bill, which might be even insurmountable if the provisions of Section 6 were carried out. Many of the institutions were organised and incorporated long before the establishment of the State Board of Charities. From the lawyer's standpoint, therefore, the *ex post facto* question might come up. Whether the suggestion made by Dr. Washburn would fully meet that objection he was not prepared to say, yet it seemed to him that in any movement of this kind it was necessary to have, not only the thorough coöperation of the medical profession throughout the state, but the advice of the legal fraternity. Before the introduction of such a bill, the opinions of members of the legislature and of the executive should be obtained as to the difficulties to be overcome.

DR. WIGGIN said that he had gone, as one of the committee, to Albany, and there had seemed to be in the legislature but one opinion—i. e., that there was a great abuse of medical charity. The *sine qua non* to the passage of the bill was that the profession should agree as to the remedy to be suggested. The bill had passed both houses of the legislature without one opposing vote. It seemed that as the State Board of Charities was appointed by the governor, and consisted largely of laymen, it was a proper body to entrust with the great powers conferred by the bill.

DR. FERGUSON then offered the following resolution:

Resolved, That this Association is heartily in sympathy with the efforts being made to correct the hospital and dispensary abuses, and that a committee of five be appointed by the president to represent the Association in the efforts to be made to correct said abuses. Seconded.

DR. JANVRIN said that he believed that Governor Black was so thoroughly convinced of the inadvisability of giving so much power to the State Board of Charities that unless this feature was removed, he would probably refuse to sign the bill.

DR. WASHBURN said that he had suggested the addition already mentioned with the idea that the authority of the supreme court would have to be stamped upon the action of the state board.

DR. L. J. BROOKS thought that there were still some objections to the bill. It would be found that from 1870 to the present time there had been an increase from 1.5 to 49 per cent. in the proportion of those receiving free medical treatment; but it would also be found that in this same period there had been an enormous increase in the medical schools, and their facilities for clinical instruction. Moreover, a large number of the medical students remained in New York city, and being very desirous of experience, accepted positions which would give them the experience, regardless of pay. One dispensary physician had just told him that occasional fees were obtained in the dispensaries, so that the physicians got into paying private practice by this route. He had heard in Albany that there had been some objection to this bill on the part of the medical schools, and he believed that this still existed, as a silent, but persistent, opposition.

DR. E. V. DELPHEY, of New York county, said he wished to emphasise what had been said regarding the wrong being done by the members of the medical profession themselves. Young medical men went into these dispensaries, (1) for pure charity; (2) for experience; (3) for the honour of the position; and (4) to secure private patients. The trouble was with the dispensary physicians. He was not at all sure that if they were paid the results would be any better. According to a statement in the *Medical Record*, the superintendent of one hospital said that the reason for the flourishing condition of the dispensaries was the incapability of the doctors outside. This he would emphatically deny. He thought if a census were taken in New York city it would be found that about one half or one third of all those in private practice had been hospital internes. As a remedy for the existing evil, he suggested that it should be considered contrary to the dignity of the medical profession to act as a physician to any dispensary which made an abuse of medical charity. The fact that the medical schools issued circulars bidding for clinical material should be taken as an indication for the necessity of doing some missionary work at home. For instance, it might be well for other physicians to refrain from consulting with those identified with schools that disregarded in this way the welfare of the profession at large.

DR. THOMAS H. MANLEY, of New York county, said, as one connected with hospitals and dispensaries, he would say that if the scientific work of the Association were cut short at this time,

and the whole remaining portion of the meeting were devoted to a discussion of this subject, it would be doing work of the greatest importance and value. He was one of those who firmly believed that all acts by legislature intended to settle matters belonging to the medical profession would be found utterly futile. The evil was not with the dispensaries and hospitals, and their managers; it was with the profession. Nor was this evil confined to the "little fishes" in the profession. The proof of this was to be found in the conspicuous absence from this meeting of the members of the various college faculties. Now, could we depend upon ourselves to enforce penalties upon brother members who transgressed in these matters? He thought not. All our efforts must be futile if we could not be honest with one another. We had had sufficient expressions of opinion; what was wanted now was action. Let the Association state clearly and distinctly under what conditions physicians could connect themselves with hospitals and dispensaries, and under what conditions the patients could be treated there. If this could not be done, he felt that nothing else could.

DR. JAMES R. MACGREGOR, of New York county, said with reference to the statements made by the last speaker, that he looked upon them as rhetorical, rather than as founded upon fact. The question was one of fraud on the part of individuals of the community, who imposed upon the profession and got something without giving any equivalent. The principle of the government was, that every piece of coin should have the stamp of its value on it, and this principle actuated all legislation; hence, we must have the authority of law if we expected to do away with imposition. It was a mere question of getting goods under false pretences. He favoured the prosecution of this question. If the dispensary bill had been passed earlier in the last session, it would never have been stifled by any "pocket veto." If introduced early at the next session, it was probable that it could be passed, even over the governor's veto. Again, it was a common policy not to state the real reason for refusing to sign a bill, and as both houses of the legislature passed the bill without dissent, it was more than probable that the real reason for it not being signed was that strong influences, from medical colleges or elsewhere, had been brought to bear upon the governor. He hoped energetic measures would be taken by the Association.

DR. JANVRIN said that he fully agreed with Dr. Manley, that the

medical profession *ought* to do certain things; it was equally certain that the medical profession would not do them—certainly not as long as two county medical organisations were in existence. In order to overcome this evil, as Dr. MacGregor had said, we must resort to the legislature, for we could not do it ourselves; we could not trust ourselves or those posing as philanthropists in New York city.

DR. WASHBURN said that it was not what the profession wanted, but a matter which three or four controlled. One individual had said to them: "You may pass whatever you like, but you'd better fix it the way we want it, for we will have it passed only the way we want it."

The question was then put, and the resolution was unanimously adopted.

THE STATUS OF MEDICINE.

By NELSON L. NORTH, M. D., of Kings County.

October 12, 1897.

Less than fifty years ago, Dr. Thomas Watson, in opening his series of lectures to his class in the Kings College, London, said :

I should ill deserve the chair I have the honour to occupy if I did not feel the great responsibility under which I speak to you. The subjects with which we have to deal are not matters of mere speculative curiosity or intellectual amusement,—to be taken up to-day and dismissed, perhaps, with unconcern to-morrow—but they involve questions of life and death. The opinions you are now to form or to embrace are, for the most part, the opinions from which, in after life, you will confidently and constantly be acting. The comfort or the misery of many families may probably hang upon the ideas that each of you will carry from this place. Therefore it is that I feel myself to be engaged in a very serious undertaking. Doctrines and maxims, good or bad, flow abroad from a public teacher as from a fountain, and his faulty lessons may become the indirect source of incalculable mischief and suffering to hundreds who have never even heard his name. These reflections fill my mind with an almost painful sense of obligation imposed upon me by my present office of closely sifting the facts, and of carefully examining the principles to be derived from those facts, which I propose to employ for your instruction and guidance.

It were well, gentlemen, if a like sense of obligation were felt, not only by every teacher of medicine, but by every one assuming to lead medical thought and practice, by preparing and presenting medical papers to this or kindred societies. It is as true to-day as it was in the dim past, that in much writing or of “making many books there is no end.” It might also, perhaps, be considered unfortunate that so often

the latest writer or speaker on a medical topic, with consummate wisdom—or egotism—deems his “facts,” and the deductions therefrom drawn, or the conclusions he arrives at, to be the only real “facts,” sensible deductions, or logical conclusions. Now with the multitude of teachers, and the multitude of writers, and the multitude of investigators, and the multitude of deductions and opinions, together with the multitude of *exact* illustrations and demonstrations, is it any wonder that the question arises in one’s mind, now and again, “What is truth?” Or that the medical man should now and then find himself in the position of the member of congress who, before and during his speech, had partaken of too much congressional “tea,” and in his bewilderment had cried out, “Where was I at?”

The Status of Medicine:—The humoural pathology of the ancient Greeks saw all forms of diseased action as a development in the humours or liquids of the body. Later, savants found the causes of disease to be an abnormal action of the solids of the system. Later still, and probably nearer correct, the pathological teachers easily explained to their pupils that both solids and fluids were at fault, in causing many of the abnormalities that assisted in the development of what has been termed disease.

Later still, men have watched cause and events in and around them, and have concluded, naturally, that atmospheric influences, climatic conditions, with the food we eat and the draughts we drink, the exercise we take or fail to take, as well as the thoughts we think, have much to do with our bodily comfort and health, or unhealth.

It has gradually dawned upon the human family, also, that the condition of parents—both male and female, both before and after the birth of their offspring—had something to do with the healthfulness or unhealthfulness of the race. This thought of heredity, however, has not yet sufficiently matured to cause to be enacted proper marriage laws, or proper laws to regulate the procreation of the species. An enormous gain to the race in physical, mental, and spiritual

healthfulness would be easily apparent in the single lifetime of an ordinary well-born individual if half as much care and forethought were exercised by the law makers, or by the people themselves, regarding the marriage relation, the proper condition of the persons who enter therein, as to appropriateness of mating, the health or perfectness of bodily parts, their age, condition, etc., as the ordinary farmer or stock raiser gives to the procreation of his horses, cattle, and pigs.

Later on, and within our day, pathological science has taken on more of exactness. Hear the eloquent essayist, as he discourses upon the "onward march of medical science" and "the advancing strides of the surgical art." Hear him descant, as well he may, upon the wonderful developments and explanations of diseased actions, the progress of medicine, the progress of surgery, the great possibilities before us in a biological point of view, the immense advancement made in the prevention of disease, the controlling of epidemics, the stamping out of epidemics and contagious diseases, along with the wonders of asepsis and antisepsis. I say, well he might boast of advances and wonderful possibilities! and yet, and yet, where are we?

Is the germ positively the cause, or only the accompaniment, of the disease; may not more than one germ produce like symptoms? How much of the real cause of disease do we really yet know? Is it the germ, or is it the effect of the germ? Is it the germ, or the toxin, that produces the pathological condition? Can the germ always, or even sometimes, with positiveness be destroyed without destroying the life of the individual? Can we positively cure the disease by counteracting the toxin? If we say yes in diphtheria, for instance, will there not be some to contradict it, and with reason? Is consumption curable now? Is it any more so than it was before the discovery of the bacillus tuberculosis? Is not the practice of medicine in relation to the treatment of phthisis more unsettled and ineffective to-day than before the discovery of Koch? Is not the neglect of hygiene, climatic and medicative methods, doing more harm than the

direct germ treatment is doing good? And so is not the balance against us? It is not *asserted* that this is the case, but the questions are put that we might think seriously on this line; that we might discover the true status of medical practise at the present time.

For special and sufficient reasons the writer has been exceedingly interested for five years and more in the subject of the cause and development of the train of symptoms and their effect upon the individual and the effect or non-effect of the many modes of treatment recommended for the disease denominated diabetes. He has eagerly read everything he could find upon the subject, listened attentively to whatever he could hear bearing upon the disease, tried very many of the so-called remedies therefor; he has been repeatedly encouraged, and as often discouraged, as to results. He has finally reached the conclusions that a very moderate amount of medication, a little dieting, not enough to materially reduce the patient either in weight or strength, a careful watching on the part of the patient and attendants that he be not greatly exposed to the inclemencies of the weather, whether of heat or cold, and a careful avoidance of such exposures as would tend to bring on complications, as complicating diseases are so apt to prove fatal, and withal a careful attention to the condition of the stomach, with a rather free administration of the aids to digestion, with *nux vomica* and arsenic as tonics, and paying more attention to whether the kidneys are doing their *normal* work in the discharge of the urates, etc., than to the mere fact of how much sugar is voided with the urine, would give the patient more comfort, more ease of mind and body, and a better chance for a prolonged existence than either extreme medication or slow starvation under the euphonious title of "Diabetic dieting."

It occurred to the writer to see what was the treatment regarding diabetes fifty years ago, and picking up a copy of Watson's "Practice," which you know was his public lectures to his class first delivered in 1836 and 1837, wherein he says in his concluding remarks upon the subject:

Gentlemen, the older I grow, the less despondence do I feel upon first ascertaining that a patient is voiding saccharine urine. Of the well-marked cases, a few—not many—have recovered perfectly, and, so far as I know, permanently, even to the return of the urine to its natural specific gravity. Others have gone on by slow or rapid steps, to a fatal termination. In not a few, the main symptoms of the complaint, I mean a considerable impregnation of the urine with sugar, have continued for months and years, without material deterioration of the general health, until the patient has been cut off by some other illness. It would seem that when the digestive organs are capable of properly assimilating a sufficient quantity of food to sustain the bodily fabric, other portions of the aliment may run off in the form of sugar with comparative impunity to the health. But even this, the best state in which a person who remains diabetic can be, is a perilous state.

I must caution you against a premature conclusion that your patient is well. Apparent recoveries—nay, apparent cures—are not very numerous. And this is of great importance to know. Remedies are not useless because they fall short of their full scope. It is better to keep a man on the edge of a precipice, if you cannot pluck him away from it, than to let him fall over. And many diabetic patients are kept in this predicament of dangerous safety.

Dr. Watson then speaks of remedies,—opium, iron, creosote, etc.,—and refers to the fact that many remedies have a strong “controlling influence,” that many times they seem to cure. He then utters words of caution, regarding the supposed cures, and says with great force:

So long as the density of the urine continues permanently and decidedly above the healthy standard, there is no real security. The smallest disturbing cause, exposure to cold, an intemperate meal, unusual exertion and fatigue, sudden or strong mental emotion,—may bring back all the symptoms in their former severity. If these and similar hurtful agencies can be averted, life may sometimes be prolonged, in much comfort, for many years.

Diabetes is a disease upon which has been expended *much* patient research. I might weary your patience, and keep this Association for hours should I attempt even a résumé of the profound research as to the cause of diabetes, the

mental shock, the deranged digestion, the sugar formation in the liver. The glycosuria as the result of atrophy, degeneration, malignant or other disease of the pancreas, or of the diabetic conditions caused in animals as the result of ligation of the duct or of the partial or entire removal of the pancreatic gland. Much, very much has been done, and much is being done, rapid strides, if you please, are being made toward the solution of the problem as to the true nature and real pathological condition, which results in the symptoms which we call diabetes, yet who can improve upon the advice given to the physician or the patient by the careful observer whom we have quoted, the great teacher, the modest but profound professor of the theory and practice of medicine in King's college, London, fifty years ago?

Verily, we are not as wise now as, perhaps, we think we are. Medical practice, including surgery, is yet far from perfection. I do not think it is saying too much to repeat that the status of medical and surgical thought and practice in these last years of the nineteenth century is experimental and unstable, and hence unsatisfactory. Our young men of to-day must not suppose that the strife is over, or that the conquest for exact scientific medicine is fully won. Much remains for the coming investigator and teacher to elucidate and explain.

Take the disease, *pneumonia*. The journals and the text-books teem with descriptions of the kinds, divisions and subdivisions of the types, forms and developments of the malady, while the lecture-rooms resound with pathological lore in connection therewith, but what about the treatment? Really, almost anything you like. Usually, however, ammonia, digitalis, whiskey, etc., with kindred endeavours to overcome a congested and obstructed respiratory and circulatory apparatus with one form of stimulation or another, with learned talk about pneumococcus, bacillicides, etc. Let me ask, does any one claim better results from the treatment of pneumonia as practised now than formerly? Let us suppose a case.

In March, 1897, Mr. B., living in good style on the "Hill" in Brooklyn, is taken with a severe chill, one following another in quick succession, with pain in the side and a sharp catch in his breathing, short, catchy cough, and great distress. He is greatly frightened. His wife in alarm calls in her friends, and her physician is sent for. On the arrival of the doctor, he, too, is alarmed, for he quickly recognises by the symptoms a case of pneumonia of a severe type. His patient is a warm personal friend, a man of prominence and wealth, and he greatly desires to do all he possibly can for his recovery. He early suggests a consultation, and a learned professor from the college is called in. The patient is given digitalis pretty freely, with carbonate of ammonia. Brandy and milk and cold pads or poultices are applied over the chest. A trained nurse is put in charge for the day watching, and another for the night, with directions to keep accurate account hourly of the temperature, pulse, and respiration. The decubitus is carefully maintained. Sputum is sent daily to the bacteriologist, that accurate knowledge may be had continuously of the number and condition of pneumococcus or other germ developments. A bulletin of the symptoms is prepared morning and evening signed by the attending physicians, that the public press may announce the condition of the distinguished patient. On the morning of the sixth day from the attack his friends read in their morning paper the fact of the "painful duty to announce that Mr. B. of No. — Clinton Ave., Brooklyn, passed away from 'heart failure' after pneumonia, notwithstanding every effort that science could suggest, or his distinguished medical talent devise for his recovery. During yesterday, alkaline hypodermatic injections were faithfully used along with oxygen inhalations, but in spite of all, Mr. B. sank and died at about 1 o'clock p. m. Arrangements for the funeral have not yet been perfected."

Let me briefly record another supposed case. The date was in March, 1847. The locality was in the middle portion of Manhattan Island. Michael McGinnis, a labourer on

the new Hudson River Railroad, was the patient. His wife, Bridget, describing his case to the doctor, said "Sure, doctor darlint, God bless your soul, and why did n't yez hurry, ye spalpin? To think that the likes of ye would be after letten me Mikey die for the want of a bloodin', sure now, he has not drawn a clean breath since he came home the night, and he is coughin' continually, so he is, and will yes be lookin' now at me new bedspread covered with the dirty blood he do be spittin'. Holy Father help you, doctor darlint, will yes do something for me Mickey? Do ye see now? Sure he'll die for want of breath."

"Ah, be easy now, Bridget, give a man time to think, will you? Hand me the broomstick, now bring a basin," said the doctor.

"Sure that's a dasint man yes are now, doctor. I knew ye'd be bloodin' him; take heart now, Mickey, ye'll soon be better, me laddie."

"That's sensible talk now, Biddy; we'll have Mike back on the road in two weeks swinging his pick."

"Arrah, docther dear, he's going off sure, so he is, arrah."

"Never fear, Bridget, Mike is only fainting from loss of blood. Fix his pillow now and let him lie down. Give one of these powders every hour, put a big poultice over his chest, and put a hot bottle to his feet, and give him a bit of broth, and I'll see him again to-morrow. Good bye."

"Good bye, docther darlint," and she sat down for a smoke when the patient fell into a comfortable sleep, from which he awakened later greatly refreshed. Of course his fever and the cough increased again in the interim of the doctor's visit, and so in the morning he repeated the venesection, and gave a calomel purge, and instead of continuing his anti-mony he gave Dover's powder with calomel in small doses and "smoke-root tea," and other general directions which his wife amid her household duties was able to carry out. After a few days the patient began to expectorate more freely, and within a week he complained to the doctor that his gums were terribly sore. "Sure, docther," he said, "me

teeth are too long," and "his breath," his wife said, "smells like a backhouse, 'so it does, docther dear, savin' yer priseness." The doctor assured them that all was right, and gave directions to stop the powders and make a sage and gold-thread wash for his mouth, and to give Mike a "bit better broth, but to continue the 'snake-root tea' and mind he don't take cold."

After some ten days Mike was well on his way to recovery, but as a neighbour told his wife, "Looking somewhat the worse for the wear." She answered laconically, "Sure then, a live dog is better nor a dead lion."

These supposititious cases are not given to indicate that all attacks of pneumonia prove fatal now, nor that all recovered with the old treatment, but more to illustrate that a definite course of action, albeit, perhaps not so exquisitely scientific, may result more successfully than the indefiniteness and instability of modes of treatment not well understood even though based upon supposed scientific facts and methods. It may also enforce a lesson that prompt, energetic, direct methods, such as we advise to poor people, sometimes result better than the more careful attention given the wealthier class.

Then again the surgical methods of to-day, while "something marvelous in their progress," are yet more or less unsettled and scarcely well established. In the early days of this century, as we are told, there was a system of partial antisepsis, though not known as such. It was thought that wounds should be dressed with alcoholic dressings to be successful, and a great surprise was felt by a certain army surgeon of one of the French regiments because no alcohol had been supplied to the expedition, and he was obliged to use pure water instead; when the results, to his great satisfaction, were equal to the old methods; hence for years water was used almost exclusively as the proper dressing for wounds. The great advance introduced by Lister when antisepsis was first used understandingly is appropriately praised by all.

Still, methods have continually changed from that time to the present. The cumbersome technique of operations under the carbolic spray has given way to solutions of carbolic acid, bi-chloride of mercury, hydronaphthol, etc. Much of the time even nothing is used for the irrigation of wounds but water sterilised with heat, and it is questioned by some whether these more powerful germicides do not do harm by interfering with the normal antitoxic properties of the normal parts or liquids, as the tears or membranes in the eye, or the amniotic and other liquids in the uterus, and its appendages. Robert L. Randolph says,¹ "Kronig and Menge have shown that the vagina possesses a natural immunity from infection, and that this immunity or natural resisting power is invariably impaired by an antiseptic injection. I believe," he says, "that some such safeguard surrounds the conjunctiva, and that this membrane possesses in its cells and fluids antibacterial properties calculated to successfully withstand injection, or else it would be impossible to explain the relative freedom from disaster after operations upon the eye, especially after those which were performed in the days when no precautions were taken to avoid infection." . . . "In the clinic, which after all is the supreme court where these questions are finally adjusted, we are every day getting proof which points to the existence in every part of the body of a natural power of resistance to, or a recuperation from, the action of pathogenic bacteria, and I think that ophthalmologists can bear witness to the fact that the eye must possess this quality in a high degree," and so he continues.

It cannot be doubted that surgical antisepsis and asepsis are becoming every day more and more simple. There can be no doubt that the efforts to procure antisepsis from employing methods and means directly injurious and harmful of themselves have resulted in harm instead of good; patients have been poisoned by carbolic acid solution, and the tissues have been destroyed by too great efforts directed against pathogenic germs.

¹Archives Ophthalmology July, 1897, page 384.

It would be strange, and yet it is not impossible, if time should prove that the alpha and omega of antiseptics are cleanliness on the part of the surgeon, his attendants, and his instruments, and cleanliness of the patient and his surroundings. It is more than probable that the worst and most damaging pathogenic bacteria find the way to the victim on the hands or upon the person or the instruments of the operator, his surroundings, or those of his assistants or nurses.

Let it not be supposed, gentlemen, that these remarks have been made in a spirit of criticism, or with the thought of in the least minimising the magnificent results to medicine and surgery of what is known as the germ theory of disease, or that the writer would fail in appreciation of the patient research and observation of those who, during the last quarter of a century, have been indefatigable in experimentation and study, unmindful of their own health and many times without pay or reward, and in many cases, too, without even thanks, save in the self-consciousness of having benefited the race and of having assisted in the development of a great truth.

Rather let it be understood that the thought of this effort on my part to-day, is to voice the ranks of the medical profession in a petition to the investigators, teachers, and leaders of medical thought and action to concentrate their thinking and their action so as to give us more definite ideas of the true intent and meaning of these investigations, that the great mass of the medical profession, who have not the opportunity, and possibility, nor the ability to themselves follow in the line of these bold researches, may profit by them in the power to better combat disease. We ask you to codify, so to speak, the results of these experiments, researches, discoveries; so that we may put them in practice, and so be the better able to cope successfully with disease as we find it among the masses of the great populations of the earth as we go among them, and as they look to us, pleadingly, to help them.

THE GROWTH OF COMMERCIALISM IN MEDICINE.

By JOHN SHRADY, M. D., of New York County.

October 12, 1897.

In approaching this complex theme, there are many besetments, which involve more or less controversy. Indeed, there may be suspicions of ulterior motives for, mayhap, an untried form of ambushade, since it is known that statecraft may even masquerade for diplomacy. At the outset, however, there need be a disclaimer to the effect that there is to be any eulogy of honesty in any form, lest it be set down as cant in favour of the code. The purpose, then, to be announced, is that of self-examination, as to whether or not there may not be some sins of our own which require the penitential tear.

We have heard somewhat of the outrages that have been perpetrated against us in the way of non-recognition, or, what hurts our pride not a little, of that indefinite something which we consent to call ingratitude. It is not to be gainsaid that our pride has been sorely wounded, and that we have been balked in our efforts to hoard up the Klondike surface washings, amid unaesthetic surroundings, of that barbaric simplicity which make the want of probity fatal. That there have been hardships of no mean sort, the best panoplied of us stoutly maintain, for did not, in this very borough of Manhattan, begin the history of our profession, with a petition for the monopoly of shaving?

But in those days of unusual sanitary conditions, when the ocean breezes did not sough against cloud-piercing towers, nor even whirl around the massive chair of a De Peyster in Bowling Green, there was little heed of aught but pastoral joys or nocturnal frolics. There were then no heavy licenses

for the sale of very small wares, and the little learning in vogue was easy of capture, without question of its source. In very truth, the local colour had then a sober tint, and the picture a deep perspective. Since then, posterity has garnered the honest fruitage of not over-much labour, and has whet its appetite with the spiced offerings of the luxurious voluptuaries from every clime beneath the sun. But those halcyon days are gone, for the home of commerce has come where once were quaint cottages and low-bending trees. The counting-house has crowded away the May-pole, craft has displaced honesty, and the agent with his satchel of samples crosses the threshold with the ambling grace of Mephistopheles.

Now the schoolboy chuckles over his barter, for has he not early learned the power of wealth, and that money is current everywhere, no matter how obtained! He has mastered business long before his prayers, and knows the biography of every merchant prince. How much, and how quickly, is about his only ritual! If money comes not at the bidding, what time can there be for the wild carnival which scatters what it cannot use? Thus, with a starving soul, he goes to the banquet of life. Gold, gold, but never the idolatry of the great, the unselfish, and the true, is his progressive award. He bites the rosy apple but to fill his mouth with ashes. Aye, he is to be denied what he has won from the unsuspecting, for the irony of fate has long ago taught that the calm of philosophy is not the accompaniment of the pride of possession. Still he ever searches for new fields, sterilised by auriferous deposits. Grown to manhood with the empty shout of public weal, he saps the foundations of public morals. But what boots it; he hugs his gatherings, from which the eyes of angels are averted, and deludes himself into the belief that his conscience-smitten gift is charity.

Now of this name, or *umbra nominis*, we have heard much. Business men claim to practise it with the click of machinery, and vaunt it even in their supplications, while they wince

at the voice of the whining beggar, who plies his art upon their credulity, with their saddest eyes. They keep a syndicate, and their forms need no revision, for they have been passed upon by their board of managers, who investigate, but seldom find their standard of poverty. What shall we say, is it high or low? With such seeming virtues romance endows the rosy-cheeked milk-maid, and to it the rollicking tourist scatters his coin. But here, in this boasted metropolis, the cajoler of the best traits of a common humanity skulks away, with his rags and tatters, from off the face of the cleanest streets. His picturesque outfit and beseeching face no longer linger, to be beckoned into a studio as the model of a grand old Lazarus. Duty, the synonym of all that is obnoxious, is limited to the nickel-in-the-slot, and the almoner is invisible. Faith is charity, for the sisters have the confusion of twins.

To this we add, without sarcasm, that we have no need to question the wisdom of business men who have caught up with the nineteenth century in the rant of its worship. Is poverty, then, a sham, only to be mitigated when abject? Is it never to be led by the gentle hand? Must starvation never be relieved, except behind the door of the poorhouse? Say not, rather, that charity ceases when regretted, and that the personal equation vanishes when there is too much organisation. Justice at a lynching bee, likewise, is but a mockery when diffused through many hands by the gripping of a long rope. Like the still-remembered cartoon, thumbs point to the culprit with a " 't was him " around an unbroken circle.

When we physicians of the long ago—for the years flow swiftly—were wont to say but little of fees, and chanced with the future for a livelihood, was there less recompense than now? Was there not more gratitude, and more tender remembrance than in this age of rampant misgiving and shirked responsibilities? Did then the poor talk of our experiments or vivisections? Did we then chase the coin down to its covert? Rather, did not the turmoils of con-

science make us penitent and tender? Did we not picture the tribunal somewhere, only too glad that the deception was not ours and that we had missed the sickening draught of discovery? Did we then care to cast the sinless stone? Did not our humility grow with our years, for was there not before us a shore, bordering the misty sea of all knowledge?

Some one has defined charity to be the telling of A to B what C ought to give. This is undoubtedly the commercial custom. As professional men, we have always been more practical with what few virtues we are supposed to possess. We scarcely protest with the hand outside the pocket. Think all guilty until proven innocent, has never been our motto. In truth, have we ever been on the alert for "the little heaven below" which cash-in-hand is supposed to give? Knowing that we have more rights than we ever cared to claim, we have waived them for the sake of a swifter progress. We have turned from our ledgers to our books. Why should we bandy words with a chattering crowd, or carry our right of petition up to a legislative hall? Who cares for our woes, for have we not been too proud to parade them? In the present drift towards paternalism, we might even say, with Emerson, we are only "bartering subsidies for privileges." Know ye not that there was long a scribbled inscription in one of the rooms of Temple Bar, London,—“Law is dear, but it is prime, it is prime”? The price is high, and commodity invisible. The year between us and Santa Claus has ever been exceedingly long and the gifts contemptible. But then does the 'long-shore man get any more for the dripping body that he has fought to the dock? He parses gratitude with an oath.

Let us indulge in a little introspection. Let us see if we have not ourselves fallen away from our high standards. Let us admit that we have adopted some of the formulas of trade, for what else can we say when such advice as "You must make your market" is baldly flaunted, with never a zest of Machiavelli that all governments are liars? Let us

refer to that other almost criminal insinuation, "Well, there are more ways than one," which is—oh, so well—hammered into our ribs. Our love of greed has been stimulated by the rarity of exceptions, and a vendetta has been established for mutual extermination. There has been rife a persistent effort for undivided possession; for a kingdom without satraps; for a dogmatic isolation conjoined with a shameless effrontery. Covert acts have been in vogue to cut off the opportunities of the honest plodder, who is assigned the rôle of the unskilled workman for the chance of a minimum reward, while stupendous fees are deemed attainable by the merest clutching. All these; not with design, we admit; but still the consequences are not a whit less deplorable,—aye, to the verge of abject degradation. But the great public has been enlightened by the usual slipshod methods, to wit: with information on just enough to alarm their fears. To be sure, there has been no flagrant offense offered to the most exquisite taste; none of the nimble art of the street preacher, balancing as wares the coarsest virtues on his finger-tips; but still the suggestions are dire and exact. The rattle and clatter of the plates only tell of old tests and old escapes.

The journalist may have trimmed from the common heap the jewel of modest merit, but the gravity of our doubts is most oppressive. His zeal for the public may have been of the "purest ray serene," but, unfortunately, there are many judgments at variance. He has his friends, too, who stoutly defend him against the charges of purloining microscopic slides, portraitures, and photogravuric misfits for newspaper columns. Still he is persistently correct in his miniature, but somewhat obscure in his statements of superb excellencies. This editor of ours *so* loves to revel in surprises, *so* well uses the power of the press, and pirouettes *so* trippingly away from the latest scandal to the worship of the latest paragon. Thus jocularly do some men their duty, regardless of the woes of their victims. But, seriously, we would excuse such blunders, were they not so fatal to budding

reputations. Yet these catastrophes may befall the humblest Fellow of our Association—even him who storms over being found “among the distinguished persons present,” and who is so vexed at the absurd praise so lavishly bestowed.

What an outrage upon a physician who simply tries to do his duty, just as does every other brother of his profession who seeks not his own but another’s welfare. If he elects to mitigate an eulogy by a declaration of his merit (alas! far below the average), he is incontinently accused of an attempt to prolong a controversy for the sake of notoriety, and not at all in the interest of a nobler standard in his chosen calling.

He has laid his tribute before a shrine, and is therefore roundly denounced for keeping a mascot. Should he be convinced of the virtues of a mineral water, his jealous brethren accuse him of merely stringing his hard-earned honours after his name! But he has really been duped by an advertising agent, who has played upon his credulity. His simple, scientific disposition has been made to subserve the ends of an enterprising manufacturer, who is exploiting his discoveries throughout the land. Even those references, “by permission,” on the cards of struggling nurses, may have been an abuse of the best of natures. Alas! such is the enterprise of trade; such are the indiscretions of our blatant admirers, who keep not within of their own affairs!

It is just by such methods as these that civilisation is retarded by the only still, small voice that our too-trusting consciences are made to hear. We can never be brought to understand why it is that the merchant, from behind his bargain counter, keeps forever giving out his malicious opinion that no physician can be made over into a business man; why our modes are held to be crude; the language of our science, jargon; for, says the advertising expert, where is your art of *not saying*, where the non-obviousness of the delicate insinuation that your commodities are just a mite

superior to those of your rivals? Have we done more than our duty to the public? Where are our arts of faint praise of possibilities? Where the long vista of years yet to come, where the negative yet to be developed, and where the well-graced actor yet to enter?

Sweet plaudits such as these, says our man of a commercial emporium, may be cheaply had, just at the cost of a quizzical shrug or a tone of sadness. If not thus won, why not "the reading notice," to be stumbled on unawares, and thus cheap at any price? That neighbour of yours in yonder palace, who stands up grandly in his pew and essays to deceive with pious interjections, has fared, in his day and generation, much better, for the wails of his victims possess the soft cadence of a longer distance,—aye, just the width of the gulf between Dives and the poor man in Abraham's bosom. Still in the see-saw of an inevitable destiny, the one, as ever, looks down and the other up. The one has a scowl, the other, a smile; for joy has fled from one, but abideth with the other.

What says the state—the state of all nations, grades, forms, and conditions, which but enforces fealty to itself and jeopardises naught for its own interests? It is not strictly charitable, but it suavely does the work of charity, without heed of the hardships or perils of the person. Aye, along its moving armies there ever rings out the hoarse, high-pitched order, "Wounded to the rear." If it helps, it is without coddling, and without the soothing stroking of kinship; as a conglomerate mass it moves and flounders,—very like the leviathan buffeting the waves, it is merely powerful for displacement. On its day of danger, it may call for levies, but the pay it gives is the sense of duty and a tinsel crown of martyrdom. It may have a thrift of its own, but has made no provision for the legacy after death. It talks of ignorance and vice, but not at all of misfortune; with it a blunder is worse than a crime. It may fight, but seldom arbitrates, and when revolution or carnage comes, it dies washing its hands, with a supercilious curl of the

lips. The prating is for justice, swift, stern, and sweeping; not for mitigating mercy, charity, or any other persuasive grace. Like the street gamin, it is disappointed that the patrol wagon holds only thieves instead of murderers. This club of affinities but wants the sensation; that is the curdling life of the melodrama. It must have the carnage that leads to glory, but never the glow of the fireside that woos the slumber of peace. Why, then, should we mix our appeals with clamour for the royalty of a meagre patronage, or a short official life? Let us rather be dumb before our shearers, that our submission may pass for stoicism, our self-conquest for grit. May we also not have honour for *our* scars?

That as a moiety of the community we have suffered in the financial depression of the past few years, none will have the temerity to deny. But let that pass, for acknowledgments are more or less painful. In a politico-economical sense, we have become versed in the maxims of supply and demand, we have heard much of over-production, and have had many experiences of buying in the cheapest, and selling in the dearest, market. We have imbibed trades-union ideas, and have insisted on immediate and adequate recompense. We have catered to the prejudices of the dependent classes, by informing them that our revenue was from the rich, and that the surplus was cheerfully bestowed upon the unfortunate in lieu of fee-less skill. Why therefore should we complain if the much talked of gratitude was absorbed in the mere sense of a cancelled duty? If we referred our cases without demur to the hospital and dispensary, because our skill was far beyond the means of the applicant, why protest that damage came to our prestige? If we exalted the charity of our neighbour, why cavil if he receive the credit? If we enhanced his reputation, why deprive him of the emoluments, be they what they may, if only such were the returns for his toil and trouble? How few read the lesson of the *right* to give in the parable of the prodigal, and how many waste their indignation upon him, who served his father, lo,

these many years! The fault lies with a slinking away from our individual charities, and a reference of what is our plain duty to a corporation, or to the state itself. Both of which may relieve—be not startled by the harshness of the phrase—through motives of policy. Ah, in the squabbles of our childhood, how soon we learned to conceal our grievances from our parents! How much more precious was the redress, when the settlement was all our own! How much less the rancour, when the skirmish was too brief to grow into a battle! How much happier when we had no grim judge to face, whose regret was, that the law provided insufficient punishment for the crime! Let us not therefore saddle our shortcomings upon those who bestow merely to escape importunity, and appoint grand almoners because their sympathies are shocked at the mere sight of misery. Just so, the brigands of old hoped to win eternal happiness by the pittance at the shrine. The self-tormenting saint, in his lifelong practice of samaritan virtues, erects a higher ideal, and is much more sure of the hosannahs to the “good and faithful servant.” What need, we ask, for that perpetual delegation of our very virtues along with our liberties, to a hazy unification of a something we call power, divorced from wrong? Is it any more distinct and select than the hug of the crowd?

As a profession, too, we have allowed ourselves to be deceived by over-statements of success on the part of those who have won the popular favour. We may even have enhanced our own merits by well-directed self-laudations, which in the young, pass for enthusiasm, in the old, for candour. While the merchant has speculated with capital, we have sported with reputations. What have we gained,—only an ownership insignificant and transient. Beginning a career when the votary of commerce is arranging for retirement, we find that our attainments do not advance us beyond the rank and file, whom we have been taught were created to furnish us with cases, to them, incomprehensible. Gathered up by the wayside, and hurried into the institu-

tions of learning, we have had proven to us the progressive glories of medicine, and especially that all of life was antiseptis. We have found that after an awakening from our disillusion, that our preparations have been mainly for a sham battle, and that Jupiter, after dividing with the warrior and merchant, allows the poet the entire world, just because he has divested it of its most desirable treasures. The ample room above we have carried as a tradition, some of us from the kindergarten, and we have striven to escape from the multitude, among whom statures are dwarfed, and visions bereft of their tawdry mockeries. We soar, but soon strike the bars of the cage.

Somehow the self-deceptions of our commercial part do not beguile us, inasmuch as in our investigations we become annoyed, like John Hunter, by the guest after the guinea, and envy the pipe and simple needs of some Virchow, poring over the deepest problems of life. To us in what should be the valley of content fit for a Rasselas, the luring invitation of the mountain top, upon which a castle may be built, has as ever withstood the flattery of our prayers. Let us not, my friends, look upon legislation as a panacea, or seek to abolish hospitals as a lesser remedy for our tribulations. Let us not stultify ourselves by demolishing what for centuries we have been erecting. Much of our best work has been within hospital walls, and few of us would part with the memories of our first "God bless you." We have been disappointed, it is true, but because of too much expectation, and the absence of cringing appeals. How could we hope from the law but an extension of advantages, and an enlargement of a community to which none of us can be admitted to full membership? How can we be exempted from competition by legal enactments? Still, as we are expected no longer to pass upon questions, as jurors, we may become useful as signers of petitions, and as a colleague expressed it, "Practise medicine as a blind." Judicious investments rather than accumulated earnings are made by one of the English journals to explain the rather insignificant fortunes

left by practitioners of more than national fame. With our diplomas we carried off the vows of the clergy, of whom we were once an integral part. We have preached philanthropy long enough to defend the text and cease our strictures upon flaws in doctrine.

Many are the arts of trade, and often have we, as a profession, essayed to adopt them, but the glamour has not strictly deceived, and our mimicry has been much too awkward. The intellect of the many-headed, we have already divined, is by no means dull, and the ways of the charlatan are soon divined. Our dignity is not to be of that order which prompts to stuff the bosom, and to ride erect with long-curved sword, for the homage of an hour. "Why not," says our lawyer friend, "the fee is large, and a portion may buy a home?" Somehow we have come to dread the "Nevermore" of the croaking raven and to belittle our services, for had we never a contempt for our work even when we wore not the livery? The salesman of glib tongue, the financier of plastic conscience, and the inventor of ready brain, emerge from the mine far richer than we, whose competitors are too apt to be of our own household. Our pay is the bulky coin of the iron age, much too heavy for the convenience of commerce. Nay, further, it is our born prerogative to serve our fellows, to defer their doom by kind offices, and select none even for the value of their lives. The tradesman, the landlord, and all who gain a livelihood out of the necessities of others, may flourish under the aegis of the law, preferably not ourselves, for legislation knows but one remedy, that of the leveling method. It takes care to spread only on the thin slice. Much toil and much self-conquest is the screed in our book of fate. Let us read it with a contrite submission, and like the beggar in the market-place, wait until the moiety grows into an investment. It is not for us to waste life in banquet halls, with well-rehearsed laughter, and invite placid slumber to the sound of the lute. Reverently, our kingdom is not of this world, for though art may make the Sybarite, science never, and "then, too,"

rejoins the Cynic, "There may be no more sleep upon a bed of down than upon a pallet of straw; no more content with millions than the frugal meal with much liberty." "Anyhow," continues a modern Diogenes, "we could much better enjoy our outing, were it not for that ponderous book of questions so pompously borne in our rear."

A STUDY OF ALCOHOL, TOBACCO, COFFEE, AND TEA AS CAUSATIVE FACTORS IN THE PRODUCTION OF NERVOUS DISORDERS.

By CHARLES E. LOCKWOOD, M. D., of New York County.

October 12, 1897.

When we consider the great strides which science has taken during the past century, the increase in wealth, means of locomotion and transport, and improved facilities for the communication and interchange of ideas throughout the world, coupled with the study of the vast multitude of accumulated facts, and the problems of civil government, and we add emotional causes, business cares and worry, hereditary tendencies to nervous breakdown, the various blood diseases which especially attack and produce weakening and degeneration of nerve tissue, one can readily appreciate that the human brain cells and central nervous system are subjected to a great and continuous strain. To pass this ordeal successfully requires a healthy, well-nourished brain and nervous system, proper methods of diversion and intervals of rest, with perhaps occasional resort under certain circumstances and rules differing in different individuals, to food accessories which act as brain and nerve stimulants, and help to preserve more uniform rhythm and hinder somewhat retrograde metamorphosis. One cannot wonder, therefore, that food accessories are widely and instinctively used, and that the study of such substances, with regard to the formation of rules for their use on a scientific basis, has become an important subject.

In this paper I cannot lay much claim to originality ; it has rather been my aim to concentrate as much as possible

the light that has been thrown on these subjects by scientific investigation up to the present time, and to draw out the experience of others.

The following statistics, very kindly furnished me by the Bureau of Statistics, at Washington, will give an idea of the general consumption of those agents in the United States, and add interest to our investigation :

During the year 1895, the total amount of distilled spirits consumed was 78,828,561 gallons ; wines consumed, 19,644,049 gallons ; malt liquors consumed, 1,043,232,106 gallons ; total consumption of wines and liquors, 1,140,764,716 gallons ; total consumption per capita of distilled spirits, 1.12 gallons ; of wines, .28 gallons ; of malt liquors, 14.95 gallons ; of all liquors and wines, 16.35 gallons per capita by a population amounting June 1, 1895, to 69,753,000. In 1870, with a population of 38,558,371, the consumption per capita of distilled liquors was 2.07 gallons ; of malt liquors, 5.31 gallons, and wines, .32 gallons, so that, with a population nearly double in 1895, there was a decrease in the consumption of distilled spirits to 1.12 gallons, and an increase in the consumption of malt liquors to 14.95 gallons, nearly three times as much per capita, the consumption of wines remaining at about the same figure. This shows the increase of the use of liquors weak in alcohol, and the decrease of the use of those strong in that substance, and also indicates the importance of our looking after the proper manufacturing of our malt liquors.

As regards coffee, we find the net imports in 1895 were 643,234,766 pounds, valued at \$94,599,880, or a consumption per capita of 9.22 pounds ; the consumption in 1870, with a population of 38,558,371, having been 6 pounds per capita ; with population nearly double in 1895, the consumption of coffee has increased only about 3 pounds per capita.

In the matter of tea, we read the net imports in the year 1895 were 96,437,042 pounds, valued at \$12,979,869, with a consumption per capita of 1.38 pounds. In 1870, with a

population about one half that in 1895, we note the consumption of tea per capita as 1.10 pounds, so that we find the consumption of tea has decreased, and also coffee, while the use of malt liquors has evidently increased.

As to the use of tobacco in the United States, the acting commissioner of internal revenue wrote me as follows, May 22, 1896:

The receipts from the sale of internal revenue stamps, during the fiscal year, ended June 30, 1895, indicate a consumption as follows:

Tobacco	248,269,638	pounds;
Snuff	10,831,474	"
Cigarettes and cheroots	4,163,972,440	number;
Cigarettes taxed at .50 per M.	3,327,403,780	"
Cigarettes taxed at \$3 per M.	1,073,897	"

An exhaustive study of alcohol, coffee, tea, and tobacco, involving a consideration of their history, chemistry, use and abuse, and general physiological and pathological effects, is too wide a subject for our present consideration. I shall, therefore, confine myself to a brief presentation of their physiological actions, as far as at present known, and a study of their influence as causative factors in the production of nervous disorders, and we must first lay down the general principle, that there is no universal standard for all, but that the effects of these agents differ under different circumstances, such as climate, age, temperament, and various other conditions; that human instinct is a valuable guide, and as Abraham Lincoln remarked, "You cannot fool all the people all the time." On the other hand, nothing has been more clearly demonstrated than the fact that there may be aberrations of instinct, and that instinct must be guided, in many instances, by reason.

These substances, as to their physiological effects, may be roughly classified, in the present state of our knowledge, as follows:

Alcohol is a stimulant in moderate doses, and a narcotic in toxic quantity, and, in a certain sense, a food.

Tobacco is a stimulant and sedative used in moderation, and relaxing, depressing, and paralysing in its toxic effect.

Coffee and tea are nervous stimulants in physiological, and nervous depressants in toxic, dose, without narcotism; such effects differing with varying circumstances, such as the individual factor, habit, climate, and so forth.

We will now consider the action of alcohol.

1. As to its general effect on the human race, as derived from the researches of statistics.

2. The physiological effects on the human system, as far as known.

3. The part it plays as a causative factor in nervous disorders.

As to the general effects of alcohol upon the human race, Dr. Alexander Collie wrote to the London *Lancet*, in November, 1887, giving quotations from a paper written by M. Fournier de Flaix, in which the following observations were made: "Alcohol is not then a scourge which threatens the European race with the fate of the Oceanic races, inasmuch as the nations who consume the most alcohol are the nations whose criminality is least, and whose vitality is greatest. Italy consumes very little alcohol; its criminality is appalling. Spain consumes three times less alcohol than Italy; its criminality is double. Sweden, Denmark, and Norway, with a population of about one third, consume four times the quantity of alcohol consumed in Italy, and yet the criminality of the former is small, whilst that of the latter is large. Russia consumes four times the alcohol of France, but the birth-rate is almost double. Thus," he says, "the hypotheses are upset. The most vigorous, the richest, and the most moral of the nations are those which consume alcohol. The prediction that alcohol will destroy civilisation and the human race is not supported by facts. France consumes less alcohol than the United Kingdom; its birth-rate is less, and its mortality, criminality, and suicide rates are greater. Those parts of France are most vigorous where consumption of alcohol is greatest." The immortal Shakes-

peare said: "Good wine is a good, familiar creature if it be well used; exclaim no more against it." "Alcohol is a good gift to man, a good servant, a bad master," says another.

It seems, then, most important at this juncture to lay aside prejudice, and, with the wave of the enthusiastic search for truth which characterises the present age, endeavour to learn what alcohol is, its status as a food or stimulant, or both, its physiological effects on the human system, varying with different circumstances, and to endeavour to ascertain the laws governing its skilful and profitable, or unprofitable, use.

The physiological effects of alcohol are still not well known, some authorities regarding it as food, others not. Its entire effect on the nervous system is not understood. Its hereditary influence is still a matter of dispute. Experiments are now being carried on under the auspices of the committee of fifty, which, it is to be hoped, will add to our knowledge in this respect, and so far they have given us some interesting results as to its effects on digestion, its retardation of the growth of the yeast plant, and the lessening of the physical and psychical activity of dogs and cats. The two last points are of special interest in connection with the investigations of Dr. Otto Snell, as to the effect of alcohol on *mountain climbers*; he received sixty communications from mountain climbers, thirty-seven of which, or sixty-two per cent., condemn the use of liquors, wine, or beer as an impediment, rather than an aid; twelve are for a moderate use of wine, but pronounce against brandy or beer, and only five of the sixty expressed their belief that alcoholic drinks are beneficial or harmless to climbers.

The general conclusions drawn by Dr. Snell from these answers is, that, while in exceptional cases alcohol may be harmless or possibly useful, as a rule great moderation is desirable, while the majority of experts are for total abstinence until after the climb is over, and some even strongly urge abstinence or great moderation on the day before the expedition.

The study of food products, now being carried on, is also

another step in the right direction, and it is our fervent wish that further results may enable us at some future time to construct a nutritive diet on physiological principles, which can be adapted to individuals with varying temperament, hereditary, and constitutional conditions and environment. "At present," as Professor Nitti says in his essay on "The Food and Labour Power of Nations," "the law binding the labour power of nations to their system of diet is not yet a definite conquest of physiology, and has only reached the stage of an empirical truth, based on the researches of statistics."

Alcohol is produced by the fermentation of all saccharine bodies, and synthetically by the action of a particular ferment (*Torula cerevisiae*) on saccharine substances, causing them to split up into alcohol and carbonic dioxide. The fermentation ceases when the proportion of alcohol present reaches 18 per cent. Its characteristic chemical properties are its affinity for water, its coagulating power on albuminoids, and its antifermentative power when stronger than 18 per cent. As to its physiological action, many important facts have been ascertained. Locally, prolonged contact with the integument produces a sensation of warmth which, if continued, results in inflammation. It hardens the integument by its coagulating power on albuminoids and its affinity for water. On the stomach and intestines, when taken in small quantities properly diluted, its effects are first local, causing increased activity of the capillary circulation and stimulation of the glandular apparatus of the mucous membrane of the mouth and stomach, followed by a free secretion from the gastric follicles, due probably to the increased supply of blood and stimulation of the gastric nerve.

On the effect of alcohol on the various processes of digestion, the investigations of Chittenden and Mendol have thrown much light. The results of these investigations upon the effects of alcoholic preparations on the action of the different ferments concerned in the digestion of food are difficult to sum up, owing to the difference of action of the various liquors according to the preparation under consideration.

Roughly we may conclude that alcoholic preparations in small quantities do not interfere with gastric digestion—on the contrary, under some circumstances, they increase it; that the digestion of starchy foods by the saliva and pancreatic juice is not markedly retarded by small quantities of absolute alcohol; a small percentage of absolute alcohol may even lead to a slight increase in digestive power; but wines retard pancreatic and salivary digestion, malt liquors retard salivary digestion, and trypsin proteolysis is interfered with by all such preparations. Further investigation is needed to decide their influence on absorption, secretion, and peristalsis.

On the circulatory system, the first effect of alcohol in small quantities, according to Dr. McArthur, is to stimulate the heart, causing a slight increase in frequency and a marked increase in force, a dilatation of the cutaneous capillaries, and probably, also, those of the brain. In poisonous doses, a lessening of the heart's power by 1-20 and the blood pressure by 1-6 occurs. The circulatory system is the last to succumb to the toxic effect of alcohol.

According to Rolleston, alcohol forms a compound with haemoglobin of red corpuscles, which takes up and parts with oxygen less readily than normal haemoglobin. This leads to a general diminution in the metabolism of the body, and, as a result, the amount of fat in the body may be increased.

On the central nervous system, according to Rolleston, "alcohol has, first of all, an indirect effect, by its action on the circulation; it supplies the brain and spinal cord with more blood, and so increases their activity. It acts directly on the nerve cells as a functional poison, hence, though first stimulated by alcohol, the central nervous system becomes subsequently depressed. The higher centres connected with mental activity suffer first. After the cerebrum, the cerebellum and cord are affected, and last of all the automatic centres in the medulla controlling the vaso-motor, respiratory, and cardiac movements become paralysed."

As some one has said, there is much in the action of alcohol on the nervous system that we are still ignorant of.

Temperature.—Small doses of alcohol, frequently repeated, will cause a slight primary rise in *temperature*, but in liberal quantities, it lowers bodily temperature.

According to Rolleston, as a result of the dilatation of the peripheral vessels, and the large amount of blood passing through cutaneous areas, the loss of heat by radiation and convection is greatly increased with regard to the influence exerted on the production of heat. Most of the evidence goes to show that metabolism is diminished, and thermogenesis less than normal.

Dr. Nansen says that the use of stimulants and narcotics of all kinds should be abandoned in the region of the North Pole. He experimented with tea, coffee, tobacco, and spirits, in turn, and found that he could contend against cold and fatigue better when he abandoned their use entirely. Alcohol, in appreciable quantity, diminished cell activity.

The liver, being the first to receive the blood freshly charged with alcohol in a more concentrated condition than after dilution by the general circulation, is the first to feel its stimulating effects. The *liver* cells are stimulated, and as a result we have an increasing flow of bile.

The physiological effect of alcohol on the kidneys is an increase of the watery portion of the urine, and a decrease of the urea. Increased amount of water is due to increased blood pressure; the diminution of urea, to lessening of oxidation of the nitrogenous tissues.

Elimination of alcohol.—*Moderate amounts of alcohol* are assimilated by the tissues and used up in much the same way as carbo-hydrate foods, and leave the body as carbonic acid gas and water. Some may pass off, as alcohol, by the lungs. The faeces do not contain any of the alcohol taken by the mouth.

Dr. Bodlaender, quoted by Bînz, found that in healthy persons, at most, 3 per cent. of moderate quantities of alcohol could be recovered in the body. When excessive doses have

been taken, it appears in the urine, just as sugar may under similar conditions.

"This fact does not prove," says Dr. Rolleston, "that alcohol, when taken in proper quantities, is not a food."

Physiological amount.—Taken in small quantities, alcohol acts as a stimulant to the bodily functions generally, and especially to the *vascular* and *nervous* systems. *Large* doses have a directly depressing, or narcotic, effect. The amount of alcohol which can be taken daily for long periods, without producing any pathological results, varies, of course, with *age*, *surroundings*, *conditions*, and *idiosyncrasies* of the individual; but for an average person, what may be called the physiological amount, is about *one ounce* of absolute alcohol.

Just here, we may endeavour to answer the question as to whether alcohol is in any sense a food, and here we find a difference of opinion among competent observers, some holding that it is a food, for the following reasons:

Experimenters all agree that not more than 16 per cent. of the alcohol taken can be found in the excreta. The greater portion disappears in the system. As to its mode of destruction, nothing is positively known. None of the intermediate products of its oxidation (aldehyde and acetic acid) have been found, either in the blood or the excreta. If it is destroyed by oxidation, as we have reason to believe, CO_2 and H_2O (both normal constituents of the blood) would be the final products, and could not be identified as derived from alcohol. Through the lungs a small portion escapes. As to excretion through the kidneys, Binz has shown that, under the most favourable conditions, not more than 3 per cent. of the alcohol ingested is excreted by them, thus exploding the theory, once entertained, that alcohol was entirely excreted unchanged in the urine. A small amount of alcohol is excreted through the skin.

2. It prevents retrograde metamorphosis.

3. It stimulates function.

4. It increases the resisting power of nerve tissue.

Rolleston says,—“In physiological quantities, alcohol may

be considered as a food, inasmuch as it is used up in the system and is productive of energy, but there is no doubt that healthy and young people are better without alcohol. As age advances, it becomes useful, and is, of course, of very great value in such morbid states as fever, collapse, etc."

As to its action upon nutrition, Dr. James C. Wilson, in his article on "Alcoholism," in "Pepper's System of Medicine," says:

We recognise two *modes of action*; of these, the first is direct and in part local, and results from the stimulation of the glandular apparatus of the mucous membrane of the mouth and stomach, from increased activity of the circulation, and from direct stimulation of the gastric nerve. Hence increased secretion of the digestive juices, augmented appetite, more active peristalsis, and improved digestion, to which, indeed, the direct action of alcohol upon the cerebrum doubtless contributes. It is to these effects that the favourable influences of this agent in the extremes of life, when it is so well borne and useful, must be largely attributed.

The second mode of action is indirect and general. It has been shown that alcohol diminishes the amount of carbon dioxide expired and of oxygen inspired; that it diminishes the quantity of urea excreted, and that it lowers the temperature of the body. It follows that normal oxidation goes on more slowly; that there is diminished tissue change. Alcohol supports the body; not by nourishing it as a food, but by curtailing waste. It favours nutrition; not by augmenting the receipts, but by cutting down the expenses of the organism. But nutrition and waste are correlated and complementary. They are, in fact, essential and associated processes of life, of which one is not more necessary than the other to the maintenance of health. In various pathological states the arrest of waste is a cardinal indication, and for this purpose alcohol holds the first place. But in health, this action is itself pathological and the beginning of evil. The fat accumulation of the drunkard is due in part to the sugar and starchy matter taken in malt liquors, but much more to this control of waste, as is shown by the fact that spirit drinkers, who have sufficient food also, often become fat. Alcoholic excesses tend not only to fat accumulation, but also to fatty degeneration of the tissues. The opinion that alcohol, in any dose or under any circumstances, is a food in the ordinary acceptation of the term, is no longer tenable.

Metabolism.—According to Rolleston, partly as a result of its action as a functional poison on the tissues of the body, and partly from its influence on haemoglobin, the metabolism of the tissues is diminished by alcohol. It is generally held that urea, sulphates, and phosphates in the urine are diminished under the influence of alcohol.

Parkes, however, found that dietetic doses of alcohol do not alter the excretion of nitrogen, and concluded that in a healthy man, on a uniformly good diet, alcohol does not interfere with the metabolism of nitrogenous tissues.

Chittenden found by experiment that alcohol increased the excretion of uric acid 100 per cent. The elimination of urea and total nitrogen was, however, diminished. The output of carbonic acid gas by the lungs is diminished.

The increase in fat which follows the constant use of some alcoholic drinks, such as *beer* and *porter*, is due partly to the sugar contained in them, and partly to general alteration in the metabolism. It cannot, according to Rolleston, "be explained on the supposition, sometimes put forward, that the alcohol is burnt off at once and supplies the energy which is normally obtained from the catabolism of the tissues, and that as a result of this protective oxidation the fat accumulates in the body; small quantities increase the output of work for a time, but as the stimulating effect passes away, the capacity for work falls considerably. Its action thus consists in bringing out the nerve powers for a short effort, and not in restoring or husbanding sources of energy. The experience gained from long marches of troops is that the use of alcohol tends to diminish the total amount of work done. It may enable a man to spurt, but not to stay. It is dissipative rather than conservative of energy."

In answering the question as to the physiological action of alcohol, I have quoted largely from the reports of Chittenden and Mendol, the article on "Alcohol" by Dr. Lewis L. McArthur, in "Wood's Reference Hand-book," and also from the article on "Alcoholism" by Humphrey Davy Rolleston, in Vol. III, "System of Medicine," edited by Dr. Allbutt.

The nervous disorders due to the action of alcohol as an exciting or predisposing cause are numerous and varied. The effect of alcohol on the nervous system (as Dr. E. D. Fisher says in his article on "Alcoholism," in the "Text-book on Nervous Diseases by American Authors"), "varies with the manner in which it is taken, habitual use being more often followed by pathological changes than periodic excesses." He also remarks that "the predilection of certain persons to be affected by alcohol is dependent upon some constitutional condition, which it is difficult to explain, and that rheumatism, gout, lead, and heredity have an important influence in this respect, and that not sufficient importance is placed on the degenerative influence of alcohol on the children of those addicted to its use. In other words, we must recognise the fact that there is a class of subjects who cannot use alcohol habitually without detrimental effect."

The pathological changes of the nervous system produced by the habitual excessive use of alcohol are, according to the same authority, "degeneration of the nerve cells of the cortex of the brain, the vaso-motor centres of the bulb and cord, parenchymatous and interstitial inflammation of the nerves, and arterial degeneration, with hyperaemia and chronic inflammatory conditions."

According to Rolleston, thickenings of the pia mater and arachnoid increase in size of the Pacchonian bodies, and excess of the subarachnoid fluid, due to atrophy of the brain, are common in alcoholic subjects, but are also normally found in old persons. In some rather exceptional cases pachymeningitis has been found, and not infrequently there are signs of chronic meningitis, such as thickening of the pia mater and adhesion of the underlying cortex. The brain is shrunken, and the convolutions are distinctly separated by the sulci. The ependyma of the ventricles has been described as granular, or villous, as in general paralysis of the insane.

Microscopically, the vessels passing in from the pia mater

and those in the brain substance are tortuous, and show endarteritis and miliary aneurism. The perivascular lymph spaces are dilated.

Degenerative changes are met with in the fifth layer of the motor cells of the cortex. The cells become vacuolated, undergo fatty degeneration from the *toxic effect* of alcohol, and finally disappear. The spider cells are greatly increased in number. These effects are comparable to those occurring in interstitial hepatitis. Chronic myelitis, probably due to meningitis, and not showing any systematic arrangement, is met with. Degenerative changes occur irregularly in various groups of the ganglion cells of the cord.

Systemic scleroses in the cord are occasionally seen, and when in the ascending tracts might be attributed to neuritis, or an extension of the same process. Optic neuritis may be due to chronic meningitis. Dr. Sharkey has recorded a case of alcoholic retinitis. The changes in the nerves begin near their peripheral distribution, especially in the intra-muscular branches of the motor nerves.

Dr. Sidney Martin has described the following changes: First, at one or more spots on a nerve fibre, the medullary sheath disappears entirely, the remainder of the sheath, above and below this interruption, still staining with osmic acid. The axis cylinder in the affected part becomes attenuated, and finally ruptures. The part of the nerve fibre between the rupture and the muscle now undergoes Wallerian degeneration.

The process is, therefore, primarily one of peripheral nerve poisoning and degeneration, and not of neuritis, in the ordinary acceptation of the term. Sharkey has, however, figured acute inflammatory changes in the phrenic and vagus in alcoholic neuritis.

The degenerative effects of alcohol are developed more rapidly in the peripheral than the central nervous system. Recovery may take place in peripheral neuritis, but when definite organic change has taken place in the brain, the prognosis is bad.

The action of ethyl alcohol on the cortical nerve cells has been lately investigated by Berkeley, who examined the brains of five rabbits which died in convulsions, after being fed for periods varying from six months to over a year upon diluted alcohol. Very slight abnormal alterations were found in the vascular walls. A large number of the pyramidal cells had on their protoplasmic extensions tumefactions of various sizes, commencing, apparently, near the free extremity of the dendron, and accompanied by a disappearance of the lateral buds of the dendritic processes. The axis cylinders were found to be perfectly normal. The same alterations, but much more pronounced, were found in the Purkinje cells of the cerebellar cortex. The neuroglia structures were, apparently, unaffected. From the comparative insignificance of the arterial changes, the writer considers that the destructive lesions observed are to be attributed, not to nutritive changes induced by defective supply of nourishment, but to the direct irritant action of the poison on the protoplasm.

Dr. Gowers very truly says, in the second volume of his work on "Diseases of the Nervous System: " "Many of the organic and functional diseases already described may be produced, or predisposed to, by intemperance, but," he adds, "some other derangements are due chiefly to this cause, and are seldom or never produced by any other," and these may be classified as follows:

Affections of the cerebrum, and its meninges; nerves of special sense, as the optic nerve; the spinal cord, and its meninges; the peripheral nerves, motor and sensory, and these may be further classified as functional and organic. The affections of the cerebrum produced by alcohol, as an exciting or predisposing cause, have been grouped by Dr. Henry Mandsley under six heads:

1. Delirium tremens, or acute alcoholic insanity.
2. Alcoholic mania, acute, sub-acute, or chronic.
3. Mania of exaltation.
4. Acute transitory mania, which ends after a few hours

in a heavy sleep, and in which there is a strong hereditary predisposition to insanity, and a weak and excitable nervous constitution.

5. Alcoholic dementia, the result of organic degeneration of the brain produced by the continued action, but not to be cured by the present disuse, of alcohol.

6. Dipsomania, characterised by a vicious craving and habitual self-indulgence, being a recurrent alcoholic mania, the outbreaks being paroxysmal and periodic. It is neuropathic in its nature, and owns a morbid, nervous inheritance, such as ancestral insanity, epilepsy, or drunkenness, also a sequel to injury of the head, sunstroke, or an attack of acute insanity.

To these Dr. Gowers adds another class :

7. *Acute melancholia*, and also remarks that in almost all cases of this kind there is an hereditary tendency to mental derangement, and the alcoholic excess is merely the exciting cause.

Epilepsy is, according to Dr. Gowers, occasionally an effect of alcoholic excess, but the attacks seldom occur periodically ; usually, as he says, a series of attacks are excited by a bout of drinking, or even by a single intoxication. The meninges of the brain are affected in chronic alcoholism by chronic meningitis, the chief symptoms of which are headache, which, according to Dr. Gowers, is moderate in degree and sometimes absent, slight delirium, mental failure, and slight optic neuritis. Dr. Gowers says that opacity and thickening of the arachnoid and dura mater are met with after death in some cases, chiefly marked over the convexity of the brain, and are probably the direct effect of the alcohol.

As to alcoholic amblyopia, due to optic nerve atrophy, consequent on optic neuritis, there seems to be a difference of opinion. Dr. Gowers says it is an undecided question whether alcohol causes amblyopia and optic nerve atrophy, such as result from the use of tobacco. In many cases of tobacco amblyopia, there is a history of alcoholic excess, but its production by alcohol alone is not well established. He

seems to think that in many of these cases there is chronic meningitis. On the other hand, Dr. de Schweinitz says that a true alcohol amblyopia has been demonstrated with sufficient frequency to quell all reasonable doubt. Connor, for example, Dr. de Schweinitz says, who has taken the trouble to collect twenty-seven cases of pure tobacco amblyopia, reports a couple of instances of equally pure alcohol amblyopia.

As regards the effects of alcohol as a predisposing and exciting cause of cerebral haemorrhage, Dr. C. L. Dana says: "The excessive indulgence in alcohol for a number of years produces arterial disease, thickening of the meninges, and atrophy of the brain, with, in many instances, a terminal condition of cerebral haemorrhage, and that it is also an exciting cause of cerebral haemorrhage." He also remarks that the moderate indulgence in alcohol, in persons not especially predisposed to arterial disease, has no particular influence in leading to apoplexy.

The affections of the spinal cord and its meninges, due to the excessive use of alcohol, are few, as, according to Dr. Gowers, an isolated affection of the cord, due to alcohol, is rare; still, he admits a chronic meningitis, due to alcoholism, which may give rise to general inflammation involving both the pia, arachnoid, and the superficial layers of the cord in different degrees.

He also gives chronic alcoholism as the cause most influential and important in the production of chronic myelitis, which, he says, is usually associated with chronic meningitis. He says this cause in these cases is of special importance, because its effects are met with in many cases of chronic myelitis that are excited by injury, the result of which would have been trifling and transient but for the tendency induced by the profound effect of chronic alcoholism on the tissues.

Functional hemianaesthesia, similar to the unilateral which is met with in hysteria, is said to occur frequently in France in alcoholics.

Neuralgia, in the form of pains in the limbs, is met with, due, according to Gowers, to the result of an influence of alcohol on the nerves, such as in greater degree causes actual neuritis, but he also remarks that some of these nerve pains are produced through the agency of a gouty diathesis, to which alcoholic excess unquestionably contributes.

Muscular tremor, due to alcoholic excess, is the most common symptom, seen chiefly in the hand, lips, and tongue. It may be noticed in the legs, if looked for. It is, according to Gowers, a fine, irregular tremor, and occurs only when the muscles are put in action by the will, probably due to derangement of the motor nerve cells. Insomnia is frequently complained of, and visual hallucinations, according to Gowers, may distress the patient between waking and sleeping, and may prevent sound sleep. We may add irritability, restlessness, and failure of memory.

Multiple neuritis, of which alcoholism is by far the most common cause, according to Gowers, is one of the results of chronic alcoholism. The symptoms may present either of the three leading forms: paralytic atrophy, sensory loss, or ataxy; a combination of the motor and sensory, or of the latter with incoördination, are, according to Gowers, most common.

In general paralysis of the insane, it is conceded that intemperance may aid other influences in producing it.

In studying the physiological effects of tobacco, we may first note that such effects vary with the quality and quantity used, and according to habit, temperament, age, sex, and general constitutional conditions.

As Rolleston very truly remarks, "It is true of tobacco, as of other agents affecting the nervous system, that the personal equation is to be regarded. The quantity consumed with impunity by one man is poisonous to another. Each smoker must estimate his own resistance, and regulate his dose accordingly. Many persons, of unstable nervous system, may be less able to withstand such influences."

The general physiological effects of tobacco, its alkaloid,

nicotine, and the alkaloids produced by its combustion, such as pyridine, collidine, picoline, and other bases, are such as to indicate that it acts especially on the spinal and sympathetic systems of nerves, and, in lesser degree, upon the cerebrum, cerebellum, and nerves of special sense, medulla-oblongata and vaso-motor system, producing stimulation and sedation, in small doses; and relaxing, depressing, and paralyzing effects, in larger doses. In large doses, it is a virulent poison, acting principally on the heart, causing a sense of fluttering and excessive faintness, copious perspiration, sense of alarm, sickness and vomiting, coldness of the skin, feebleness of the pulse, convulsions, and death. Other symptoms especially prominent in certain cases of tobacco poisoning—either caused by a single excessive dose, or by inordinate indulgence in smoking or chewing, are a rapid, followed by a very slow, pulse, hiccough, due probably to irritation of the phrenic nerve, cold perspiration, dilated pupils, profuse diuresis, convulsions without loss of consciousness; sometimes cataleptic, sometimes hysterical, and *great numbness, as well as impaired motor power*, of the limbs and tongue. These symptoms seem to point in the same direction as the results of experimental doses of nicotine, namely, that they seem to be produced by the effects of tobacco primarily on the sympathetic and spinal nervous systems.

As in the case of other medicines directly affecting the nervous system, the habitual use of tobacco deprives it of many of its graver effects, especially if the general health is not reduced below its normal standard. At the same time, as Dr. MacKenzie said in 1832, we are familiar with the consequences of minute portions of other poisons which are permitted to operate for a length of time on the constitution, such as alcohol, lead, mercury, and so forth, and we can scarcely doubt that a poison so deleterious as *tobacco* must also produce its own peculiar effects.

Dr. Wm. A. Hammond made some very interesting experiments to determine the physiological effects of tobacco, from which the following conclusions are deducible :

1. That tobacco does not materially affect the excretion of carbonic acid through the lungs.

2. That it lessens the amount of aqueous vapour given off in respiration.

3. That it diminishes the amount of faeces.

4. That it lessens the quantity of urine and the amount of its urea and chlorine.

5. That it increases the amount of free acid, uric acid, and phosphoric and sulphuric acid eliminated through the lungs; that the consumption of fat is not lessened; that it keeps up the weight, and stops retrograde metamorphosis.

Increased elimination of phosphorus, etc., would seem to indicate nerve waste.

As to the pathological effects of tobacco, it is difficult to speak positively in the present state of our knowledge. The only anatomical lesion claimed to be due to the effect of tobacco, is that incidental to a chronic form of retro-bulbar neuritis of the optic nerve, which generally affects both nerves, and is caused by certain poisons, chief among which nicotine has been claimed to be an efficient factor.

Dr. G. E. de Schweinitz of Philadelphia, who has written a most exhaustive treatise on the "Toxic Amblyopias," places this substance as an aetiological factor in the class with alcohol, the characteristic effects of which he describes as follows:

Drugs chemically diverse, and when given in physiological doses, producing greatly different effects, but when acting as chronic and sometimes acute poisons, capable of originating definite tissue changes and degenerations, including alterations in the blood.

He says,—

Alcohol was given first place, at one time, in the aetiological relationship to central amblyopia, but that at the present time, in Germany, tobacco is regarded as the more potent agent.

Connor has taken the trouble to collect twenty-seven cases of pure tobacco amblyopia, to which as many others might be added.

Ramsay doubts whether typical cases of tobacco amblyopia,

which often improve after a single night's rest, and which, on the other hand, grow worse after fatigue, are consistent with the theory that the papillo-macular bundle is inflamed. They point, rather, to the existence of some lesion of a vascular kind, functional derangement of macular fibres, and that in severe cases, especially associated with alcoholism, anatomical changes are superadded, and a true retro-bulbar neuritis results. We are not certain as to the exact pathological conditions in tobacco amblyopia. Clinically, it seems to point to disease of the light-conducting fibres of the optic nerve; anatomically, more microscopical examinations are necessary to settle it.

After death from tobacco poisoning, according to Dr. Thomas Stevenson in "Quain's Medical Dictionary," "The organs and tissues have a tobacco-like odour, and the odour of nicotine becomes more pronounced on treating them with liquor potassae. Turgescence of the brain has been described, but beyond the odour there is nothing diagnostic in appearance."

Dr. Kerr, in the article on "Tobaccoism" in the "Twentieth Century Practice of Medicine," says tobacco exerts a powerfully depressant and disturbing influence on the nervous system, and grounds his indictment against tobacco mainly on the *functional* disorders which it has a tendency to induce. He says he has frequently seen failure of vision rapidly increasing, with great nervous depression, harassing dyspepsia, cardiac disturbance and weakness, with palpitation and panting, rapidly disappear when the sufferer has abandoned the use of tobacco. As he says, it is largely through its influence on the nervous system that tobacco is used continuously and in excess, and in many cases moderately.

The nervous disorders due to tobacco are, according to Huchard:

1. Those due to disturbance of the function of the cells and the vascular supply of the cerebrum, cerebellum, and nerves of special sense, such as headache, lipothymia, faint-

ness, cerebral confusion, restlessness and insomnia, vertigo and ringing in the ears, muscular incoördination and disturbances of vision, tobacco amblyopia.

2. Those due to disturbance of the nerve centres in the medulla oblongata, especially the vagus, including dysphagia, a sense of suffocation and dyspnoea (nicotine asthma), nausea and vomiting, disturbance in the heart's action, as slowing, with enfeeblement of the heart's beat. Tachycardia, or bradycardia, intermissions, arrhythmia, palpitation, tendency towards faintness and syncope, attacks of palpitation, with extreme irregularity of the heart.

3. Those due to derangement of the function of the spinal cord and spinal nervous system, such as irritation of the phrenic nerve, producing hiccough, and disturbance of the centres of motion and sensation, producing relaxation, tremour and weakness of the muscular system, and hyperaesthesia, anaesthesia, and neuralgia.

4. Derangement of the functions of the sympathetic and vaso-motor systems of nerves, producing extreme pallour. Coldness of the extremities, cold sweats, and tobacco angina, characterised by severe pain in some cases; and in others, according to Osler and Huchard, by dyspnoea and slight praecordial anxiety, or simply of a little uneasiness behind the sternum, with the sensation of stopping of the heart and the fear of impending death.

The result, then, of our study of tobacco as a factor in the production of nervous disorders, is that tobacco in toxic quantity (which varies according to many circumstances, hitherto mentioned) acts as an irritant, depressor, and paralysar of the functions of the nerve cells of the cerebrum, cerebellum, and nerves of special sense, medulla oblongata, spinal cord, and sympathetic and vaso-motor systems, producing various functional nervous disorders such as have been enumerated, and that the only anatomical lesion of nerve tissue which is now maintained to exist by many good observers, as the result of tobacco poisoning, is retro-bulbar neuritis of the optic nerve.

Coffee is the seed of the coffee plant (*Coffea arabica*), a good-sized shrub or small tree, and is contained in the fruit of the plant, which is an oblong, rounded, scarlet, or purple, slightly juicy, berry, with a thin, fleshy mesocarp, and a papery endocarp enclosing the two seeds. The seeds are the coffee of commerce. This shrub is a native of tropical Africa, where it grows very extensively on both coasts, and far into the interior. It is also cultivated in most warm parts of the earth, especially in Java and Brazil.

The earliest knowledge of coffee came from Arabia, where it was introduced from Abyssinia at least four hundred years ago. The employment of coffee as a beverage was introduced from Arabia, in the sixteenth century, into Egypt and Constantinople. Leonhard Ranwolf, a German physician, was probably the first to make coffee known in Europe, by the account of travels printed in 1573. The first coffee house was established in London in 1652, and in Paris in 1672. When we consider that 643,234,766 pounds of coffee, valued at \$94,599,880, were imported into this country in 1895, and a consumption per capita of 9.22 pounds, we realise the universality of its use, and the importance of a clear understanding of the article and its physiological action.

The average composition of unroasted coffee is:

Caffeine	0.8 parts;
Legumin	13.0 “
Gum and sugar	15.5 “
Caffeo-tannic and caffeic acid	5.0 “
Fat and volatile oil	13.0 “
Woody fibre	34.0 “
Ash	6.7 “
Water	12.0 “

The chemical composition varies somewhat after roasting; unroasted coffee contains caffeine, and a kind of tannin called caffeo-tannic acid. During roasting, a part of the caffeine is volatilised, and an empyreumatic substance called *caffeon* is developed.

According to the article in the “International Cyclopæ-

dia," Vol. IV, coffee owes its exhilarating and refreshing properties to the presence of three substances in the roasted bean:

1. Caffeine, which occurs in the roasted bean to the extent of $\frac{1}{4}$ to 1 per cent.

2. A volatile oil, which is not present in the raw bean, but which is developed during the process of roasting to the extent of only one part to 50,000 of the roasted coffee.

3. An astringent acid resembling tannic acid, called *caffeo-tannic* and *caffaic* acid.

According to T. Lauder Brunton, the action of coffee is somewhat like that of caffeine, but differs from it in some respects, inasmuch as the *caffeon* increases the peristaltic movements of the intestine, and causes indeed tetanic contraction of it. While caffeine does not alter peristaltic movements, *caffeon* quickens the pulse, dilates the vessels, and lowers the blood pressure, and produces a sensation of warmth on the surface. In some persons, coffee produces a feeling of weight in the abdomen, and a tendency to haemorrhoids. As tea has not this action, or has it only to a comparatively slight extent, it is probably due to the combined action of the caffeine and *caffeon*.

As to the *physiological effects* of caffeine, Dr. G. E. de Schweinitz classifies them and caffeine as drugs which are nervous stimulants in physiological and nervous depressants in toxic dose.

Dr. T. Lauder Brunton gives the following as the physiological effects of caffeine:

1. Its effects on oxidation are to hasten it.
2. Action on the muscles; in small doses it increases muscular work, and causes the muscle to recover rapidly after exhaustion.

3. On the spinal cord it has the effect of lessening the conducting power of the sensory columns of the cord. This was proved by Bennet, who found that, while irritation of the posterior roots of the cord caused violent struggles and loud cries before the injection of caffeine into the circulation,

similar irritation after injection caused only a slight quiver, and this effect was not due to motor paralysis, as shown by the fact that irritation of the anterior columns caused violent muscular contractions after the injection, as well as before it. I have given this demonstration in full, as I notice, in the article on caffeine in Foster's "Encyclopaedic Medical Dictionary," it is stated that caffeine heightens the reflex activity of the spinal cord.

4. *On the brain.*—It is probable that tea and coffee cause local dilatation of the arteries supplying the brain, and possibly caffeine may increase the mental powers by a direct action on the brain tissue itself.

5. *On the accelerating centre,* the stimulating effect of caffeine is evidenced by the injection of the drug after previous section of the vagi rendering the pulse still more rapid than before.

6. *On the vaso-motor centre,* stimulation is evidenced by a rise of blood pressure, which disappears on the section of the spinal cord below the medulla, and does not occur if the cord has been divided before injecting the drug.

7. *On the cardiac muscle,* caffeine acts as a stimulant, as is shown by increased energy of contraction, the rate of pulsation remaining the same, or becoming slower.

8. As a diuretic, caffeine acts on the secreting nerves or secreting cells of the kidney itself, causing an increase of water excreted.

9. Its action on the respiratory centre is to increase the respiration.

10. The *salivary secretion* appears sometimes to be increased.

11. *On the peristaltic action* of the intestine it has little action, but it causes the intestinal veins to become much dilated, and appears to cause haemorrhoids.

12. The temperature is not altered by small doses of caffeine, but is increased by large doses.

As regards heat production and tissue metamorphosis, the investigations of Dr. Edward T. Reichert on the action of

caffeine on tissue metamorphosis and heat phenomena are of great interest. His conclusions are that caffeine increases heat production, and as a corollary, increases destructive tissue metamorphosis, and, therefore, concludes that the virtues of coffee, in the wear and tear of active life, are entirely subjective, and depend upon a general excitation of the higher tissues, and chiefly upon its powerful exhilarant action on the mental processes. He also says that the assumed ability of coffee to replace food or to increase the power for work, without corresponding tissue destruction, is consequently entirely deceptive, and the conditions produced by it are comparable to those observed at times in the insane, in hysteria, or in fright, when the individual may be capable of performing prodigious feats of strength and endurance, but, nevertheless, at the direct expense of his tissues.

The toxic action of coffee and caffeine on persons easily susceptible to their influence, or in toxic amounts, is confined exclusively, as far as we know, to over-stimulation, or functional depression, of the various nerve centres, and some local irritation of the stomach and bowels. Caffeine, according to Dr. Brunton, causes at first stimulation, and subsequently paralysis, of nerve centres, in cerebrum, cord, and medulla. As to its action on the muscles, voluntary and involuntary, caffeine in small doses has a restorative action, while in large doses, it is a powerful poison. From its stimulant action on the brain, caffeine, in doses of two to three grains, sometimes causes heaviness of the head, flashes of light before the eyes, ringing in the ears, loss of sleep, great restlessness, and delirium. Large doses depress the respiration and pulse, and lower the blood pressure. In man, the pulse, after somewhat large doses, becomes very frequent, irregular, and intermittent. This effect, Dr. Brunton says, occurs in some persons after a single cup of coffee, but is prevented in such cases by adding a little brandy to the coffee.

As a causative factor in nervous disorders, we can say that its rôle is that of a stimulant or depressant, varying with the

amount, strength, and time at which it is taken, and the condition and susceptibility of the subject. Such disorders of the nervous system are: insomnia and restlessness, fulness and heaviness of the head; disorders of special sense, as flashes of light before the eyes, and ringing in the ears; frequency, irregularity, and intermittence of the heart's action, and muscular tremor.

The physiological effects of tea have been given much study, and it is very difficult to formulate them in such a way as to make them applicable to all cases, as these effects differ greatly in different individuals, in accordance with different circumstances, such as age, temperament, climate, and conditions of health. Dr. Rolleston, I think, puts it well when he says: "*Tea and coffee are nervine stimulants without narcotism. It would seem that, in their case, the work of the nervous matter is increased directly, not let loose by narcotism of controlling centres. This stimulation, as is usual in such cases, is followed by exhaustion, according to degree of previous stimulation. It seems probable that the aromatic oils, which are obviously very different in tea and coffee, are concerned in the disturbance.*"

In my examination of the literature of the subject, the observations of Dr. William J. Morton of New York, and Dr. Edward Smith of London, seem to me to throw considerable light upon the matter of our inquiry, and I shall, therefore, quote largely from the deductions drawn from their experiments:

1. With tea, as with any potent drug, there is a proper and improper dose.

2. In moderation, tea is a mental and bodily stimulant of a most agreeable nature, followed by no habitual reaction. It produces contentment of mind, allays hunger and bodily weariness, and increases the incentive and the capacity for bodily work.

3. Taken immoderately, it leads to a very serious group of symptoms, such as headache, vertigo, heat, and flushings of the body, ringing in the ears, mental dulness and confusion,

tremulousness, "nervousness," sleeplessness, apprehension of evil, exhaustion of mind and body, with disinclination to mental and physical exertion, increased and irregular action of the heart, increased respiration. In short, as Dr. Morton says, "in immoderate doses, tea has a most injurious effect upon the nervous system."

We will now endeavour to classify the physiological effects of tea, as to its action upon the different organs and functions of the human body.

On the mind.—Tea quickens the intellect, both in thought and imagination, and takes away the tendency to sleep. Tea, taken twice through the night, according to the experiments of Dr. Edward Smith, prevented any desire for sleep.

On muscular activity.—Its effects are an increase and a greater readiness for, and ease on making, exertion, and a greater sense of exhaustion following.

On respiration.—It has the effect of a respiratory stimulant. The depth of inspiration was greater, an increased volume of air was inspired at each inspiration, varying from 3 to 10.6 cubic inches, and it caused an evolution of carbon greater than that which it supplied, from which it follows that it must powerfully promote those vital changes of food which ultimately produce the carbonic acid evolved.

The rate of pulsation followed that of respiration, but in less degree, being either not increased or slightly decreased.

On the digestion.—There is no ground for believing that it promotes digestion.

On salivary digestion.—Tea, according to Roberts, has an intensely inhibitory effect, due to the large quantity of tannin contained in the tea leaf. Coffee and cocoa have only a slight effect on salivary digestion. He says the only way to mitigate the effect of tea on salivary digestion is not to sip the beverage with the meal, but to eat first and drink afterwards.

In some instances, especially when used immoderately and for a considerable time, it produces delay of *gastric* digestion, which has been ascribed to the effect of tannin by some

authorities, while others are not certain as to what constituent of tea and coffee is the active agent in producing dyspepsia.

On the skin.—Tea tends to induce perspiration and thereby to cool the body.

On mucous membranes.—Tea has the effect to increase secretion so that there is no *dry skin* or *mouth* after its use.

On the kidneys tea acts sometimes as a diuretic, due partly to its stimulant action on the heart and the rise of blood pressure, and partly to its stimulant action on the cells of the urinary tubules. Bartels, in his article on “*Parenchymatous Nephritis*,” in Vol. 15, Ziemssen’s *Cyclopaedia*, says in his remarks on *treatment*: “I forbid the use of tea and coffee, which are supposed, and certainly not without reason, to exert an irritating action on the kidneys.”

As to its effects upon the urinary excretion, the following facts are given by Dr. W. J. Morton, as to the results of experiments made on himself covering seven days.

1. A decided increase in the sulphuric and phosphoric acid, and a moderate increase in the uric acid, while the chloride of sodium remained about stationary.

2. A steady daily decline in the amount of urine excreted. This amounted to an average daily decline of about 2 fluid ounces, or to a total decline for the week of 13 fluid ounces.

3. A large daily decline in the amount of urea excreted. This amounted to an average daily decline of 24 grains, or to a total decline of 168 grains. The most marked decline was that on the first day, of 95 grains, when he suffered for twelve hours from the extreme toxic effects of tea.

These results would seem to point to nerve depression and a decrease of normal metabolism.

As a cardiac stimulant.—Schroetter in Vol. 6, Ziemssen’s *Cyclopaedia*, says: “For the acute dilatation of the heart which occurs in the course of inflammatory diseases, our object will be simply to maintain the energy of the heart’s contraction only through a short period of time, and for this

purpose stimulants will be of great assistance, and amongst these I consider tea of special value."

The perceptible effects of full doses of tea are, according to Dr. Edward Smith:

1. A sense of wakefulness.
2. Clearness of mind and activity of thought and imagination.
3. Increased disposition to muscular exertion.
4. Reaction with sense of exhaustion following preceding efforts and in proportion to them.

To sum up, then, tea in moderate doses is a stimulant to the nervous system, and in excess a depressant to the functional action of the nerve cells of the cerebrum, medulla, spinal and vaso-motor systems; and the nervous disorders produced by its use, differing in different cases and under different circumstances, such as age, climate, susceptibility, temperament, and general constitutional conditions, are such as are due to over-stimulation and depression, the result of the reaction following over-stimulation of the various nerve centres, and may be grouped as follows:

Insomnia and restlessness, partly through its stimulating action on the brain cells and partly through stimulation of the pulse and respiration, as a subsidence of respiration is necessary to sleep.

Headache, vertigo, ringing in the ears, flashes of light, mental dullness and confusion, apprehension of evil, with exhaustion of mind and disinclination to mental exertion.

Increased and irregular action of the heart, increased respiration, muscular tremor, "nervousness," disinclination to physical exertion, hyperaesthesia, paraesthesia, heat and flushings of the body.

STRICTURE OF THE RECTUM.

By W. S. McLAREN, M. D., of Litchfield, Conn.

October 13, 1897.

It is customary to consider this subject under two main heads, the congenital and the acquired. We do not see congenital strictures of the rectum. "A stricture," as it is defined in the Century Dictionary, and I believe the definition to be a good one, "is a morbid contraction of some mucous canal or duct of the body." And so, I repeat, we do not see congenital strictures of the rectum.

We do, very rarely, see a rectum that is imperfectly developed, but these cases should be considered with imperforate anus and other forms of arrested or imperfect development, rather than with stricture. A stricture is, in its very nature, acquired; it is the result of a diseased condition, and, therefore, when I speak of stricture of the rectum, I shall refer only to what have been commonly called acquired strictures.

Strictures of the rectum are capable of division into two great classes, non-malignant and malignant. The non-malignant may be subdivided into (*a*) traumatic, (*b*) dysenteric, (*c*) tubercular, (*d*) simple ulcerative, and (*e*) venereal.

(*a*). The traumatisms which are cited by many authors as causative of stricture are blows and kicks, operations, and irritating fluids. The rectum is so thoroughly protected by the sacrum and coccyx and the nates that, though the possibility of its being injured by a kick must be admitted, such an injury is extremely rare, and, allowing such a rare injury to have occurred, the possibility of its resulting in a stricture is so remote as to justify us in leaving this form of traumatism entirely out of our aetiology.

Bungling operations may, and doubtless do, cause stricture

of the anus. It is even conceivable that a man *might* with knife, scissors, and cautery so far mutilate the rectum as to bring on a strictured condition; but for the credit of our profession I trust I am not wrong in doubting whether this has ever been done. As to the use of acids and other irritating fluids, if they destroy enough tissue to involve the deep structures of the rectum, they may cause stricture.

But if Harrison Cripps is correct in his claim that "the mucous membrane may be removed to an almost unlimited extent without causing stricture," the superficial ulceration caused by an acid, as it would ordinarily be used, could hardly be allowed to stand as an aetiological factor.

(b). *Dysenteric*.—Dysentery, as a rule, affects the *upper* part of the bowel, and as, of all the cases occurring during the war, not a single case was reported at the surgeon-general's office as causing stricture of the intestine, it will readily be seen that the number of cases of stricture of the *rectum* caused by dysentery must be infinitesimal. It is far more likely that in cases where the stricture is of supposed dysenteric origin, the dysenteric discharges have been caused by a stricture already existing and not recognised; for this frequently happens.

(c). *Tubercular*.—Ulcerations from this cause, again, are rare as a cause of stricture; so rare, indeed, that some writers deny the possibility of their ever bringing about this condition.

(d). *Simple Ulceration*.—This if extensive enough, if involving the deep layers of the rectum, may, as in the case of destruction of tissue by acids, cause stricture. The most extensive superficial ulcerations, however, are frequently seen to heal without any contraction whatever.

(e). *Venereal*.—This subdivision includes the vast bulk of non-malignant strictures. A chancre or a chancroid, if it become phagadenic, may, like any other deep ulcer, cause stricture; but it is in the late manifestations of syphilis that we find the cause of a large majority of the cases of non-malignant stricture. It is in gummatous deposits, which

become organised and naturally crowd in the direction of least resistance, *i. e.*, toward the centre, that we may find the cause of far more than half of our cases.

Malignant strictures are far more common than the non-malignant form. A stricture gives rise to but one symptom with its sequelae, and that symptom is obstruction. After the obstruction has caused the faeces to be retained for a sufficient length of time they become irritating, and provoke a discharge of mucus. This softens the faecal mass and brings away enough of it to relieve the irritation; thus we have an appearance of diarrhoea alternating with constipation.

The ribbon stool, which is so often mentioned in this connection, is not of the slightest diagnostic value. I do not mean that such stools are not caused by stricture, for they frequently are; but they are of no diagnostic value, for they are only caused by strictures which are situated in the lower part of the rectum, and for these cases, if the physician was provided by nature with a finger, a diagnosis by symptoms is not required. And in every case of chronic diarrhoea, especially if alternating with constipation, and in every case of obstinate constipation, a digital examination should be made. This is a general rule which it ought not to be necessary to emphasise.

But that the emphasis is necessary has been borne in upon me recently, by two cases of chronic diarrhoea which have come to me for treatment. One of these had for a year and a half been under the care of a prominent physician in one of the largest cities of Connecticut; the other had, during the previous two years, been under the care of three well-educated physicians in one of our smaller towns, yet in neither of these cases had a digital examination been made at any time, and in both of them there was well-marked malignant stricture.

If a stricture exists too high up to be reached by the finger, we must rely on the history of diarrhoea alternating with constipation, and on the physical signs. The colon

above the stricture will be distended and at times tympanic, and this distention will decrease or disappear when a cathartic or enema has been given.

If the stricture is of small calibre, it will sometimes be possible to distend the bowel below it with water in such a way that the tumor thus created can be preflated. This could be done quite readily in a case of stricture of the sigmoid, which I cured by resection.

This same case had another symptom which was quite characteristic, and which, though I have never seen another instance of it, I believe might be useful in aiding us to make a diagnosis of stricture high in the rectum.

My patient when he went to stool, emptied the rectum promptly and easily of a small movement, to which no amount of straining could add one particle. He then would sit there and wait for five or ten minutes, when he would become conscious that his rectum was again full, and he could then empty it as easily as in the first instance. Occasionally this process would be repeated a third time before the seance was ended. This was, of course, caused by the inability of the patient to force the faecal matter rapidly through the stricture. He could simply pass off what was below the stricture, and then was obliged to wait for more to come down.

This was a case of long-standing stricture. The patient, a man forty-five years of age, had had attacks of obstruction as far back as he could remember, and this peculiar habit regarding his movements had always existed and seemed so much a matter of course that he was totally unaware of any peculiarity in the affair until after I had done a resection for him and his bowels were moving normally, and he then related to me his former habit.

Treatment.—The treatment of this condition may be simply palliative, or we may attempt a radical cure, which, unfortunately, in many cases amounts to the same thing.

The palliative measures are directed toward retarding the contraction, and unloading the bowel to relieve the irritation.

The first of these is best accomplished by the judicious use of bougies. The size chosen should pass the stricture easily, and it should be passed daily, being held in place for ten or fifteen minutes. The second indication is met by the use of mild laxatives and enemata.

When the case is first seen, it will be necessary to unload the bowel by means of enemata; after it is once emptied, laxatives should be used quite freely. Among the best drugs for this purpose is the fluid extract of cascara sagrada. On every case of non-malignant stricture, however, if the patient will consent, an attempt at radical cure should be made.

There is a wide difference of opinion as to whether a linear division of the stricture or a posterior proctotomy should be done, Mathews alone holding that the simple linear division is the better procedure.

It is contended by his opponents that the proctotomy lessens the danger of infection, and renders concealed haemorrhage impossible.

Mathews makes the substantial claim that these advantages are more imaginary than real, and that, as an offset, the linear division avoids the danger of subsequent incontinence.

I am inclined to accept this view, for by divulsing the sphincters and inserting a gauze plug with a drainage-tube through its centre, ample drainage can be secured, haemorrhage rendered extremely improbable, and *concealed* haemorrhage made impossible.

In selected cases, excision may be indicated.

The treatment of malignant stricture depends entirely on the stage of the disease. If it is not too extensive, it should be excised. If, however, this is not possible, the treatment can, of course, be only palliative.

In closing this sketch, I should like to present to you the history of a case, which illustrates how much can be done by radical measures in some apparently hopeless cases. I have delayed publishing this case until five years have

elapsed, because the value of all such cases rests so largely on their subsequent history. This patient was first seen by me October 31, 1892. She gave the following history:

Age, thirty-seven; married; no children, and no miscarriages.

Family history.—Father and great-uncle died of cancer; otherwise good.

Previous history.—Patient has always enjoyed perfect health. Denied any venereal disease. Has not lived with her husband for the past year, as he has been leading a very dissolute life.

Present illness began, four years ago, with discharge of mucus and pus from the anus. This discharge has continued, to a greater or less degree, ever since. Constipation, which had always been somewhat troublesome, became more marked, and in about six months from beginning of the rectal discharge the habitual use of cathartics was commenced. Since that time there has been no natural movement. By the end of the first year she was obliged to strain severely at stool, even after the use of cathartics.

During the past two months there had been no movement of the bowels at all, but for past six months there had been a constant discharge of mucus, which, of course, brought out a certain amount of faecal matter in solution. Appetite was very good until the last three months, during which time she has lost flesh and strength quite rapidly.

Physical examination.—Emaciation extreme. Eyes sunken. Skin sallow. Pulse 120, regular and fairly strong.

Thoracic viscera, normal.

Abdominal viscera, normal.

Pelvic viscera.—Uterus lies low in the pelvis, and retroverted, is freely movable, and easily replaced. There is no swelling, fullness, or tenderness in the region of the tubes and ovaries.

Anus surrounded by atrophied haemorrhoids, otherwise normal.

Digital examination of rectum, at once disclosed a stricture an inch and a half above the anus. The stricture will only admit a No. 12 F. urethral bougie; it is fibrous in structure, and freely movable. It is not sensitive.

Operation, November 2. Anaesthetic, ether. Assistant, Dr. J. L. Buel. The stricture was dilated as gently as possible, with a uterine dilator, till it would admit a narrow-bladed, bivalve, rectal speculum.

The stricture was then divided posteriorly by a few strokes with a Paquelin-cautery, between the blades of the speculum. The

rectum was thoroughly irrigated, and a plug composed of rubber tube wrapped with absorbent gauze was inserted.

Subsequent history.—On the day following the operation, there was slight bloody discharge through the tube. Temperature, 99. Pulse, 115. The discharge became more and more faecal in character, and on the fifth day there was a large formed movement, which forced out the plug. The temperature never went higher than 100.4, and was normal after the seventh day.

The pulse was rapid for some time, partly on account of the general condition of the patient, and partly because she had for two months been under treatment by opium, for supposed chronic diarrhoea. This opium I, of course, cut off at once.

The convalescence was uneventful. For about a year and a half after the operation, the patient was obliged to take a drachm of the fluid extract of cascara sagrada every night. She now takes it about once in six weeks.

At this time, five years after the operation, my patient appears to be in perfect health; she is just completing a course of training in the Connecticut Training School for nurses, at the New Haven hospital, and has lost no time by illness during her course.

Her bowels move regularly and easily. There is a moderate amount of contraction at the site of the stricture; it is about the calibre of a No. 8 rectal bougie.

Authors to whose works reference has been made :

W. Allingham, A. B. Ball, H. Cripps, T. B. Cushing, C. B. Kelsey, J. M. Mathews, W. F. Van Buren.

DISCUSSION.

DR. E. D. FERGUSON asked if he had formed any opinion in his own mind regarding the aetiology of the stricture, in the case reported in the paper.

DR. McLAREN said that the only thing pointing to the syphilitic nature of the stricture was the history of the husband's dissolute life. He had made only one incision, a posterior and rather deep one.

DR. FERGUSON said that these cases were often very difficult to manage, and success was largely measured by the thoroughness with which the mucous and muscular coats, and the connective tissue around the gut itself, were divided. Unless the incision

were carried down to normal connective tissue, the process of contraction would go on, and one would not succeed in effecting a permanent cure. Dilatation by bougies would sometimes do a great deal of good, and possibly in some cases would effect a cure, but the treatment was protracted, and was not entirely devoid of danger. The pressure thus made was liable, in the hands of any one, to cause more or less traumatism, and be associated with a greater or less degree of sepsis. The absorption from the ordinary ulcerated surface was not as rapid or as serious as that occurring where a small traumatism had been inflicted. In his own work, he had found that in cases of stricture as close to the anus as that described in the paper, provided there was a certain amount of mobility, showing that the condensation had not extended to the tissues intimately associated with the bony walls of the pelvis, that incisions were very rapid in their effect, and gave very satisfactory results. At a distance of an inch and a half from the anus, the operative field could be brought well into view. Thorough dilatation of the sphincter would allow of adequate inspection of the field, and give the operator every facility for operating. His own choice was for a longitudinal incision, separation of the walls of the incision, the bringing of the ends together, and closing with sutures, as in the Heinek-Michulix operation for pyloroplasty.

DR. McLAREN said that his case would have been an ideal one for a plastic operation, had it not been for the bad condition of the patient. It was for this reason that any prolonged operation was out of the question, and it became necessary to use the cautery.

EMPHYEMA IN CHILDHOOD.

By DOUGLAS AYERS, M. D., of Montgomery County.

October 13, 1897.

The subject of empyema is always one of great interest to the physician, more especially in connection with childhood and early youth. Statistics prove that it occurs more frequently during the first five or six years of life, and that the tendency gradually diminishes with increasing age. Effusions, the result of pleuritis at this period of life, are from the beginning purulent, or soon become so as the result of infection by those micro-organisms which are found to exist as the causative factors. Of all the effusions into the chest at this age one third is placed as a conservative estimate of the number that are purulent or sero-purulent. There is no doubt in the mind of the writer that we are frequently deceived as to the nature of the difficulty, by reason of the suddenness of the attack and rapid march of the suppurative process, and in these cases it is sometimes difficult or impossible to discover or assign any special cause as the factor most prominent in producing the condition. In the greater number of cases, however, the causative factors may be mentioned in the order of their prominence as pneumonia, scarlatina, and other acute diseases, as acute desquimation, nephritis, and rheumatism; the tubercular condition, especially when confined to the pleura, diphtheria, whooping cough, etc. Septic absorption in rare instances may produce purulent effusions into the chest with or without inflammation of other serous membranes. Heubner has described a form of this disease occurring in infants in which several serous surfaces are affected with a purulent inflammation, and the disease by its rapidly fatal course and the pressure of micro-

organisms in the lymphatics, lungs, and kidneys has proved to be of a zymotic character. This writer believed when wounds were wanting through which absorption could take place, that the milk might be the source of the contagion.

General effusion is the rule; encysted, the exception. I refer now especially to infants where there has been no previous inflammatory action, but in those who are older, who may have had a previous pleuritis, leaving adhesive tracts resultant from this condition the encysted form may obtain.

The pleura at this time may be but little thickened, and only become thickened by those morbid changes which occur with the lapse of time. This latter condition, which is present both in the costal and pulmonary pleura, may serve as a firm impediment to the expansion of the compressed lung, and call for early operative interference, as localised inflammation, or the mechanical pressure, may cause the pus to burst through its surroundings, and find its way into the compressed pulmonary parenchyma, and so into a bronchus, or more rarely through the intercostal muscles beneath the integument, either condition endangering the curative process by fistulae as the result of burrowing pus, complicating the conditions by producing pneumo-pyothorax, or in rare instances reaching the peritoneum through the diaphragm, producing a rapidly fatal termination by septic-peritonitis. The exudate may be thin sero-pus, slightly or not at all offensive, or a thick yellowish green and very offensive, if left long before removal.

Bacteriological research has proven some very interesting facts as to the variation in the kind of pus producing microbe in the empyema of childhood and more advanced life. In the former it is purulent most frequently from pneumococci; in the latter by streptococci, or tubercle bacilli, or by a mixed agent of infection that is two forms of micro-organisms, in one specimen, as the tubercle bacilli and streptococci, streptococci and staphylococci, etc. This fact accounts for the disease yielding readily in children after operation without the after-treatment usually required in the adult.

I wish to call the attention particularly to the great importance of a thorough examination of the chest in young children and especially infants suffering from acute diseases, even if the usual evidences of inflammation of the lungs or pleura are not present, or if there be only slight symptoms indicative of trouble in these organs. An examination from day to day is easily and quickly made, and by so doing the danger of overlooking it is avoided. Careful and frequent attention to the physical signs will give us a better and more satisfactory insight into the true nature of the difficulty than any other means, and this applies more truly to the age under consideration than to any other period of life. Close inspection by careful comparison, accurate measurement, palpation, percussion, and auscultation are invaluable as diagnostic measures. We note the indications of pain more particularly as expressed by the faces, especially in percussing the surface, the indications as to freedom of respiratory movement,—the appearance as to perfect or imperfect decarbonisation of the blood, the extremities, ears, and lips revealing very surely the true condition. Examination as to the condition of the intercostal spaces and for heart pulsations in abnormal positions sums up the chief evidences from inspection.

Palpation reveals the abnormalities in lateral and antero-posterior respiratory movements. We may employ it in determining the position of consolidated or compressed lung and determine the pressure of fluid or air (as the cause of the displacement) in the modification of normal vocal fremitus, recognising, however, the difficulty of utilising this means of diagnosis owing to the feebleness and pitch of the voice; but delicacy of touch goes far in detecting the presence or absence of vibratory movement. The yielding chest walls of children also enable us at times to obtain quite distinct fluctuation.

Percussion reveals definitely in conjunction with palpation the boundaries of the exudate as well as any change of position of surrounding organs; auscultation, all the modi-

fications of respiratory sounds with which we are so familiar.

Constitutional symptoms vary so greatly in children that they are not to be relied upon as very certain aids in diagnosis; subjective symptoms are of minor importance when compared with the great value of the physical signs.

If fluid be found, and if it has accumulated very rapidly with rapid rise of temperature and marked prostration, it is probably purulent. The temperature where the exudate is sero-fibrinous and of the latent type, is usually found to be not over 101° F. and not subject to marked variations, but if there are marked morning remissions from high evening exacerbations, we may conclude that a change is taking place from the sero-fibrinous to the purulent form; yet this cannot be considered a hard and fast rule, as various statistics have proven that the degree of temperature is not always a certain indication of the character of the effusion.

We always have at our command as a perfectly safe and sure means of diagnosis,—the exploring needle. If the exploratory puncture reveals the presence of pus, I believe that much valuable time is lost in the use of the aspirator for its removal. While children recover much more quickly and more perfectly than the adult after operations for empyema, they do not bear as well delay in operative interference, and if not operated upon die early in the difficulty. Hence the importance of early and free evacuation. I believe that a large proportion of the cases treated by aspiration (perhaps several times repeated) require eventually the more radical and perfect operation—free incision. While statistics seem to have proven that aspiration resorted to early in recent cases has produced cures, still my experience has been, that after fair trials of aspiration, I have found it necessary to resort to incision and drainage. It has seemed to me that the process of absorption, even of residual pus (after aspiration) is always very slow and imperfect.

The absorbents first take up the thin, serous portion of the exudate, and must necessarily require a long time to remove the thick, cheesy residue, which necessitates great

loss of strength to the child, and, if it recover ultimately, it is my impression that the recovery is imperfect, and that a mark is left, as indicated by a long-continued dullness, even though but a slight departure from the normal, which may prove to be the site of a future tuberculosis or inflammatory process.

Wightman, in an article upon the mortality of empyema in childhood, in the *Lancet*, November 30, 1895, says: "An early diagnosis means a favourable prognosis." The sooner pus is removed, the quicker the recovery. ¹ I quote the following statistics at the Hospital for Sick Children, Great Ormond street, London, from 1880 to 1892: Two hundred and fourteen cases were treated. Eighty-five were treated during the earlier period by incision, with 16 deaths; and 129 by rib resection, with 23 deaths, the mortality being nearly the same in each case. Mr. Goodler in 1886 published the result of 36 cases; 19 were treated by resection, the remainder by incision or aspiration. Only one of these was fatal. Wightman published in 1894 the results of 118 cases, classifying all treatments together, showing 23 deaths. Batten published from the same hospital the results for the years 1893 and 1894, showing 43 cases treated by resection, with 5 deaths, asserting strongly that resection is the only treatment; but Wightman says his statement must be accepted with some doubt. Cantley reported before the London Medical Society 86 cases treated by the several methods, with a mortality of 16.6 per cent., the mortality being the same in resection and incision with the exception that 5 out of 6 under two years old treated by resection were fatal. Cantley's opinion was that resection should only be done when the tube could not be inserted without it, when drainage is imperfect, or when operating for the cure of an old sinus.

Wightman also gives the following from the records of the Birmingham Midland Hospital for the past twenty-five years. There were 123 cases: 99 cured, 20 died; four were not recorded. Forty-three were three years of age or under;

¹ American Year Book of Medicine and Surgery, 1897.

of these 18 were fatal. In 99 cases cured, the average stay at the hospital was seven and one-half weeks; the shortest, eleven days; and the longest, one hundred and sixty-four days. Resection was done in only six cases. In this hospital, the treatment is incision and drainage as soon as pus is diagnosed, and resection is rarely done, at least as a primary procedure.

The reports of the following hospitals, viz., Grey's, Birmingham, and Liverpool, of the mortality from empyema in children three years old and under, show a little over 50 per cent. Marshall reports since May, 1879, 45 cases with seven deaths, all treated by incision. Seven were under three years of age, and of these two died. As to the technique of the operation: After the usual careful antiseptic preparation of operator's field of operation and instruments, the incision is made below the posterior fold of the axilla, preferably in the sixth intercostal space, although circumstances may require a somewhat higher or lower point. And in order to drain perfectly, a tube or tubes not to exceed two inches in length should be inserted as large as the space will permit. A single tube in infants will be sufficient, but a double tube is preferable in those over three years of age. The tube may be secured in position by safety-pins and a rubber shield, which is held in place by a strip of adhesive plaster; then the usual covering of antiseptic moist gauze with a sheet of rubber wide enough to cover it nicely; over this the several layers of dry gauze; and, lastly, a dressing of cotton to equalise the pressure with flannel roller.

If the pus is not offensive and the drainage is free and the condition of the patient good, irrigation is not necessary and may be harmful. Nature seems to care well for the condition after the drainage is established and properly protected. Should the pus prove very offensive, or if there are clots of considerable size, irrigation should be employed. For this purpose I prefer boric acid or Labarraque's solution, as the least irritating and also on account of their

having no poisonous properties. This may be continued each day as long as the fetor continues, or until the discharge becomes serous. In ten days or a fortnight, the discharge is usually very slight and of a serous character, not more than one or two drachms in the twenty-four hours, when it is safe to remove the tube.

In conclusion, I would offer the following summary :

1. The time for operation is when the symptoms, verified by exploratory puncture, reveal the presence of pus.

2. That the operation of incision and drainage is followed by the best results as to early and perfect recovery.

3. That aspiration does not remove the pus fully ; that absorption is necessarily very slow, and as long as any remains with its bacteria, it will be a source for inflammation, and necessitates a secondary operation, by incision.

4. That the large percentage of recoveries after incision and drainage are rapid and leave no nucleus for future trouble.

DISCUSSION.

DR. FERGUSON said that empyema in children possessed one interesting feature not touched upon in the paper, *i. e.*, its causation. It had seemed to him that the key to its frequency in early childhood or infancy was to be found in the susceptibility of that period of life to broncho-pneumonitis. The character of the supuration was certainly different in that period of life from what it was later on. It was rare to have tubercular inflammation in early childhood ; it was quite common in adult life. We had only to conceive of a lobule near the surface of the lung becoming involved ; the air would be pumped out ; the inflammatory process would extend to the surface ; the pleural surface would be altered mechanically, and by the disease process, and the germs would very readily find a way of escape into the pleural cavity. Broncho-pneumonitis was very rare, comparatively, in adults, except in connection with an affection like la grippe.

INTERESTING CASES OF APPENDICITIS.

By J. D. BRYANT, M. D., of New York County.

October 13, 1897.

The uncertainty of things at their best, emphasised by the fact that hidden disease manifestations so seldom present harmonious and easily comprehended features, even to those of busy experience, leads me to present for your thought a limited number of unusual cases of appendicitis. While I am not disposed to question the assertion of those who say that appendicitis can be diagnosticated with reliable certainty, still I do express the fact that often its non-existence cannot be known without the help of operation, and sometimes not even then, until determined by microscopic examination.

At first, your attention is directed to a class of cases of chronic appendicitis characterised by abundant, and often by enormous, fibrinous exudation. Five only of this class of cases will be cited now; those that are the most indelibly fixed in my mind.

But a few years ago, a patient was sent to me for opinion and advice by my old friend, Dr. Mitchell, of Providence, R. I., with the history of repeated attacks of acute pain at the right side of the abdomen, attended with rapid increase of temperature, inguinal tenderness, and the presence of a tumor there. At the time of observation, a large, irregular, and immovable tumor, possessed of moderate tenderness and marked induration, was present in the iliac fossa. The tumor had been present for several months, and had increased in size and tenderness after each succeeding attack, only, however, to resume somewhat slowly, during the interval, smaller dimensions. Chronic appendicitis had been sus-

pected, and the idea was concurred in by myself, and an operation was advised in the event of another attack. Subsequently, the operation was performed by Dr. Mitchell, and a large mass of induration was found below the caecum, into which an opening was made, in the unsuccessful search for the appendix. Finally, the wound was lightly packed with gauze, and healed rapidly, the induration disappearing entirely. No further trouble occurred during the year or so that the patient remained under the observation of Dr. Mitchell.

The second case of this nature that came to my notice was treated by myself in the search for the appendix, in a similar manner, and with similar results in all respects.

In the third case, not only was there an enormous amount of long standing induration, but also local and constitutional evidences of recent suppuration. A free incision was made into the abscess, pus evacuated, and the abscess cavity lightly packed with gauze. It was advised in this case, for good reasons, that the appendix be removed at another time by an independent operation as soon as the induration had subsided, which was accordingly done with entire success.

The most interesting case of this series, to which my attention has been called, came under observation last winter:

This patient came from a neighbouring city, was a male, an artisan, about thirty years of age, had a fair physique, enjoyed health aside from the affection under consideration, and with no history of specific disease. It appeared that, about six months before the patient had been operated upon, by exploration of a large, indurated tumor, located at the right inguinal region, the nature of which was uncertain. It was thought that it might contain an abscess, due to appendicitis. On exposure of the tumor, it was regarded as one of the inoperable sarcoma of the caecum, and the wound was closed. Although the tumor abated somewhat in size after operation, the idea of malignancy was not relinquished, and the patient fell under my charge for operation.

There was no disposition of mine to question the diagnosis at first, nor of the surgeons to whom the case was submitted for an opinion. However, it was noticed later, that the ice-bag, which

was applied to relieve pain, caused a flattening of the growth, as though it were of a doughy nature. The mass filled the right iliac fossa, and encroached on the region of the caecum markedly. It was noticed, too, after a few days, that the size and tenderness of the tumor varied from time to time, in unison with the temperature fluctuations, and especially was this true, if much pain at the seat of the growth was noted. These facts, together with a past similar history gleaned from the patient, and the fact that the tumor had diminished in size after the first operation, and was no larger now than at that time, caused the exclusion of malignant disease, and expression of the positive belief that it was one of chronic fibrinous appendicitis.

An incision, made along the line of the previous operation, freely and promptly exposed the tumor. It involved the lower half of the caecum, and extended down nearly to Poupart's ligament, and filled almost the entire iliac fossa. The tumor was hard and immovable. It was very puzzling at first to fix upon a plan of exploration of the growth, as one did not care to incise it, fearing to cut the caecum, or some other concealed, important structure. The fibrous band of the colon, commonly leading to the origin of the appendix, disappeared immovably into the indurated mass, which could not be separated from the caecum without tearing away the serous covering, and thus laying the foundation for sloughing of the wall of that viscus.

After a little hesitation, the sharp end of an ordinary periosteotome was introduced into the growth, in the line of the fibrous band before noted, and the growth pried open, dividing it into two parts of about equal size, united below by the deeper tissues. At the line of separation, the base of the appendix was seen, extending downward and inward indefinitely into the mass. By the careful use of scissors, and the patient application of the grooved director, a complete appendix, about four inches in length, very much thinned at the lower end, was withdrawn from the indurated mass. No other evidences of inflammatory action than thickening of the appendix, and moderate circumscribed congestion of the contiguous peritoneum, were found outside of the appendix, save the indurated mass already mentioned. The appendix was removed, the main portion of the wound closed, and gauze drainage established. The patient made a continuous and complete recovery, and, when last heard from, was entirely well.

The appendix was examined by Dr. Dunham microscopically, and pronounced to be chronically inflamed throughout the entire

structure, with muco-pus at the end, confined by the thinned walls of the appendix, and a stricture of the lumen above.

The fifth case of this number came under my notice in Bellevue Hospital during the spring of 1897:

A sturdy young man of good history was referred to my care, suffering from chronic appendicitis, attended with fibro-plastic induration. The tumor was well marked, somewhat tender, and the temperature fluctuated in accord with the occasional pains in the growth.

Believing the case to be one of fibro-plastic nature, and not attended with immediate danger, it was decided to study its peculiarities for a few days before operation, with the entire and glad consent of the patient. For two or three days, the temperature fluctuated from 100° F. to 102° F. per rectum, when a sudden chill, followed by sweating and a high temperature, occurred. On the day following, the symptoms resumed the moderate trend of the time before the chill. The next day, a repetition of the same phenomena ensued. It was then ascertained that the patient had been, at a comparatively recent date, attacked by chills and fever. Quinine in suitable doses promptly reduced the temperature to 100° F., and the tumor began to rapidly disappear.

To hasten the statement, let it be said that all of the previous symptoms nearly, but not entirely, disappeared. However, the patient desired that the appendix be removed, in which sentiment I fully concurred, and it was, accordingly, done at once. No induration was found, and the appendix was intact, but contained an enterolith the size of a bean, lodged near the middle, and bathed in muco-purulent fluid, a fact which I suspected because of the lingering tenderness, and the trifling increase in temperature that had clung to the case. The patient made a prompt and uneventful recovery.

It seems to me that the outcome of these cases suggests the following conclusions:

1. That an enormous deposit of lymph may be the only product of the disease.
2. That even though repeated attacks occur, suppuration is not a common complication of this condition.
3. That free incision of the mass, attended by light pack-

ing with gauze, is followed by rapid absorption of the induration, and often by final cure.

4. That suppuration may happen ; therefore, the appendix should be removed at once, if practicable ; if not, as soon thereafter as possible.

5. That chronic inflammation of the appendix fluctuating in a mild degree provokes a response of apparently similar nature in the fibrinous mass surrounding it.

6. That fibrinous induration due to chronic appendicitis may be mistaken for sarcoma of the caecum.

The last fact is still further strongly emphasised by the knowledge of another case in point that came to my attention at a medical meeting, not long since, in which a surgeon, competent, eminent, and candid, acknowledged that he recently removed the caecum for supposed sarcoma, only to find, on careful examination of the specimen, that it was a case of fibrinous induration caused by a chronic appendicitis. It is proper to say, I think, in this connection, that this patient also made a prompt recovery.

7. That the influence of malaria may stimulate the fibrinous variety of manifestation of chronic appendicitis, and that possibly it may be dispelled by the use of quinine.

The remaining cases which I shall enumerate are miscellaneous ones, and each in itself is pregnant with forceful thought.

A little more than a year ago, a young man suffering from all of the marked symptoms of appendicitis, was seen by me in a neighbouring city, in consultation. It was noticed that he had passed through already not less than two similar attacks; one some six years before, from which he was relieved by the opening of a large abscess, and made a prompt recovery. The second attack occurred some four years later, at which time he was taken to a private hospital, and his appendix was removed by the surgeon, who conducted the operative procedures of his own institution. At all events, the patient so informed us.

In view of these facts, and also that the patient was then improving, it was deemed inexpedient to operate at that time. Therefore the patient was admonished that should another attack occur, an explorative operation should be performed.

He recovered from this attack, but quite soon again experienced a second one, although not so severe as the first. He came under my charge during the abatement of the recurring attack, at which time one had no difficulty in finding and removing a complete appendix about three inches in length.

The conclusions that this case suggest are somewhat embarrassing. However, the young man is regarded as truthful by those in whose interests he serves a very important part. It should be added, I suppose, that he made a prompt and satisfactory recovery, and has not since been similarly affected, due, perhaps, to the fact that sufficient time has not yet elapsed for another appendix to grow. At this time, he carries in a bottle the one lately removed, as positive proof of appendicular reproduction, or indubitable evidence of a final consummation, whichever one may choose to regard it.

About six months ago, I was requested to see in consultation a case of appendicitis in a young man of sturdy frame and active occupation. Two days before, the patient was attacked for the first time with appendicitis, characterised by the usual symptoms, but of a minor degree. At the time of the visit there was tenderness, without tumor or tension; pain on deep inspiration; axillary temperature, 99° F.; pulse, 90°. However, the symptoms had ameliorated since the day before. The patient objected to operation in any event, and was assured that there was no urgent necessity for the step. At the last moment, it was suggested that the temperature be taken by the bowel, and 101½° F. was registered. Careful scrutiny was advised, and in case the symptoms continued, that the patient be operated upon at once.

On the following morning, the symptoms had increased in degree, and at 9 o'clock he entered St. Vincent Hospital, and was seen by me at about that time. The pulse was 99°—; temperature, 99° per rectum; tenderness and tension slight, and the entire absence of appreciable tumor. However, the patient was anxious, and urged vehemently an operation. Slight capillary paresis was noted, and an indefinite sense of nausea was present. For reasons unnecessary to mention, operation could not be performed during the next four hours. Nevertheless, it was done as promptly as possible, and the pulse at the time had arisen to 120 and the temperature to 104° F. per rectum.

A dusky surface at this time was plainly to be seen, and the anxiety had markedly increased. Operation revealed the presence of a gangrenous appendix four and a half inches long, extending upward, at the outer aspect of the ascending colon, nearly to the hepatic flexure. The appendix was removed with some difficulty, on account of the great length and the existence of firm adhesions at the upper end. On removal, the middle half was found to be completely gangrenous; but in no place had perforation yet occurred. Several small faecal concretions bathed in muco-purulent fluid were freely movable in the lumen. A thin, grayish, offensive, watery fluid was present at the site of the organ; little evidence of limiting adhesions was found. The wound was cleansed, dressed lightly with gauze, and the patient put to bed. In spite of all effort, he died within twenty-four hours from the effects of the profound sepsis established prior to the operation.

This case illustrates several interesting and somewhat unusual features.

1. The marked length and unusual situation of the appendix. In this case, the appendix passed upward over the caecum, to gain a position at the outer side of the colon. The appendix is placed along the outer side of the colon and extending upward about one in eighty instances in the male, and somewhat more frequently in the female. In about half of the autopsies in males, the appendix is found to be from four to six inches in length.

2. The unusual extent of the gangrene of the appendix at the time of operation indicated with absolute certainty the presence of gangrene at the time of the first visit. At all events, the history of the case at that time—less than twenty-four hours before—did not suggest the acuteness of the impending danger.

In appendicitis, a comparatively rapid pulse with a low temperature is an ominous manifestation. The character of the pulse is of greater significance in these cases at the outset than is that of the temperature. The presence of an accelerated pulse with a rationally increased temperature at the outset, need not be regarded as an unfavourable exhibition. However, symptoms, like false friends, no matter how

closely watched and treated, too often lead to unexpected discomfiture.

The second of the miscellaneous cases is one that illustrates the outcome of successful surgical action on apparently mistaken hypotheses in a hysterical patient.

A female, about thirty-five years of age, with a distinctly hysterical appearance, was referred to me for diagnosis and treatment about two years ago. The recital of her past history revealed the fact that she had suffered from persistent and annoying pain in the pelvic, right inguinal, and lumbar regions for a long time, for the relief of which the left ovary had been removed, and right nephrorrhaphy practised some time before. Inasmuch as there remained only the appendix, uterus, and the right ovary, my attention was soon directed to their condition.

No evidence of ovarian, uterine, or broad-ligament disease could be found, a fact which was verified by the late Prof. Wm. T. Lusk. However, careful palpation disclosed the seat of the appendix, its extent, apparently increased size, and the presence, on moderate pressure, of the pain that had characterised her affliction. In fact, she exclaimed: "This is the same kind of pain that I have had all of the time!"

It is needless to add that the appendix was removed. The patient made a prompt and satisfactory recovery so far as the surgical end of the affair was concerned, but the pain continued the same as before. Dr. Dunham examined the appendix, and reported the presence of a mild chronic inflammation of the walls and beginning gangrene of the lining membrane near the middle and at the seat of a small enterolith. Certainly, the justification of the removal is witnessed by the lesions found on the specimen, irrespective of the operative outcome of the affliction.

At least one striking conclusion can be drawn from this case: The possibility of the presence of a gangrenous process in a chronically inflamed appendix, with no suggestive manifestations of its presence except the apparently increased size of the appendix and a pain on pressure that was not abated by the removal of the appendix. Had the pain been absent, I doubt if the increased size would have attracted attention. Since the removal of the appendix, the patient has submitted to removal of the right ovary, and is

still anxious for further effort to relieve the pain, which yet torments her.

Early last spring, the late Dr. W. T. Lusk requested me to see with him a lady who was suffering from a second attack of appendicitis. As the symptoms had much improved, delay, with the view of the removal of the appendix in the interval, was agreed upon. About four weeks afterward, he hastily summoned me again, late in the evening, on account of another attack. The temperature was 103° F.; pulse, 110°; local tenderness without tension was present. As it was then late, it was thought better to await the developments of the early morning hours than to operate at that time. The violence of the symptoms increased, however, so that by the time on the following day that the operation was begun, the temperature per rectum was 104½°; pulse, 130°. Increased pain and tension and beginning general tympanitis were then present. The appendix was easily found, but removed with some difficulty, as the extremity was adherent to the brim of the pelvis, from an old adhesion. At the middle of the organ there was found an enterolith the size of a kernel of corn, bathed in a thin muco-purulent, sanguinous fluid. The temperature and pulse were nearly normal on the following day, and the patient recovered without an unfavourable symptom.

This case seems to me to illustrate: The prompt and high degree of febrile reaction that may sometimes result from infection in appendicitis, in the absence of even approaching perforation.

During the summer of 1896, a robust, though nervous young lady, came under my notice, complaining of moderate pain and limited tenderness on deep pressure at the seat of the appendix. The pulse was normal, but the temperature was slightly and continuously elevated. She had suffered thus for some time, and was regarded by her physician as being affected with a mild form of chronic appendicitis. After observing her for a few days and treating the fever, as due to another cause, unsuccessfully, it was advised that the appendix be removed, which advice she gracefully declined, and soon, when somewhat improved, she passed from my observation.

The following year, I was called again to her bedside, and found her presenting, in every particular regard, the symptoms of the

year before. During the interval, she had experienced two or three light attacks. On this occasion, she was anxious for a prompt operation. At this time, the point of tenderness was well marked, and a small, tender tumor, the size of the first phalanx of the index finger, could be easily discerned on deep pressure. A prompt operation was done, and the most careful scrutiny failed to disclose the evidence of the least inflammation, or even the presence of an appendix. She made a prompt recovery, and has not suffered in a similar manner since that time.

This case is of special anatomic, as well as pathologic, importance, for the following reasons:

1. The absence of the appendix, which, according to Ferguson, was found to be wanting once in two hundred careful dissections. In eleven autopsies observed by Dr. Herman Biggs, at my request, some years ago, the shortest appendix was a quarter of an inch in length, and in no instance was the appendix absent.

2. A small tumor was found located in the posterior wall of the caecum, in the line of the common origin of the appendix. This growth was the deep-seated tender point which was mistaken for a diseased appendix.

Such as these are a few of the interesting cases of appendicitis that have come to my attention. And it seems to me that they illustrate respectively and in no uncertain manner the fruition of discreet anticipation, and the frost of unexpected fallacy.

A CASE OF OPTIC BRAIN ABSCESS (FROM CHRONIC OTORRHOEA); OPTIC NEURITIS. OPENING OF THE MASTOID AND SKULL.—RECOVERY.

By FRANK S. MILBURY, M. D., of Kings County.

Read by Title, October 13, 1897.

On May 25, 1897, Mrs. G. brought her sister, Mrs. J., aged thirty-three, to my office, bearing a letter from Dr. James J. Bowen, requesting me to look over the case and render my opinion; at the same time stating that he believed a mastoid operation was indicated. As I could get no intelligent satisfaction from the patient, I interrogated the sister, who stated that there had been more or less continuous discharge from left ear since infancy, following scarlet fever. At this time it was extremely offensive. By the touch of a sound, dead bone was easily perceived in tympanum and posterior wall of meatus, which was swollen and bulged forward. Mastoid, oedematous, and very red. The entire side of the head was acutely sensitive to the most gentle pressure. Violent uncontrollable headaches had continued several weeks. Slight paralysis of left side of face and right arm and leg existed. Her past life seemed wrapped in complete oblivion, and it was almost impossible for her to put what thoughts she had into words—showing amnesic-aphasia. Temperature, 100° ; pulse, 115° . Excessive vomiting on the least movement of the head, and nearly as much so when lying down and the head perfectly quiet. The ophthalmoscope showed optic neuritis in the left eye, and, more than that, the condition of the patient precluded any further examination of the eyes by the perimeter or otherwise. In all probability there may have been present hemi-anopsia. It was evident that mastoid necrosis and suppuration existed, with possible cerebral abscess and meningitis, and the sooner an operation was performed, the better. Accordingly she was placed in the Bedford Dispensary and Hospital.

The next day, May 26, at 11 o'clock a. m., with the assistance of Drs. Bowen and Rickard, she was anaesthetised, head shaved, and under the most careful antiseptic precautions we incised the soft tissues, detached the lining membrane of the meatus, laying the ear forward, and retracted the posterior integument, giving a clear

view of an extended field. The cortex in places was soft, but no fistulae or pus was visible on the surface of the bone. By cautious chiselling, the antrum was entered. With a probe I explored, and found in every direction carious bone, which was easily removed by a sharp spoon, and nearly the entire mastoid was found to be involved. The antrum and large cell at tip of mastoid and smaller cells were filled with the foulest pus imaginable. The lateral sinus came into view, but looked blue, healthy, and pulsating. A large sequestrum was removed from the posterior wall of meatus, making a broad connection between the tympanic cavity and antrum. Also the posterior-superior wall, which was soft, was removed, and the moment the brain cavity was entered pus welled out in large quantities. I enlarged the wound in skull with a rongeur, and with a sound measured the depth and extent of the pus cavity. Greatly to my astonishment the instrument passed in about four and one half inches, and I should think the sinus had a diameter of fully an inch, and involved a portion of the temporo-sphenoidal lobe. Dr. Arthur C. Brush, a well-known neurologist of Brooklyn, who was called in consultation, is of the opinion that the abscess was, in this case, formed by local purulent meningitis, the walls of which were formed by adhesion between the dura and the arachnoid. In other words, it was an intra-dural abscess. He does not think it involved the brain tissue proper to any extent on account of the rapid and complete disappearance of the symptoms after the pressure was relieved by the evacuation of the pus, which would preclude any destruction of brain tissue.

The position of the lateral sinus would indicate that it was situated above the tentorium, and the direction taken by the probe that it extended inwards, forwards, and downwards; that is, along the superior border of the petrous portion of the temporal bone to, or even beyond, the median line.

An abscess in this situation on the left side would, by pressure on the speech centres, give rise to aphasia with or without paralysis of the muscles concerned in the movements of the face and speech, on account of their dual representation, and the fact that the more highly organised centres are the ones which are the first and most seriously affected. The right hemiplegia is easily explained by pressure on the adjacent capsule. The left facial paralysis is due to the local involvement of the facial nerve in its passage through the floor of the tympanic cavity.

Two hours had elapsed in the tedious work and was well borne

by the patient, but when we began there was little idea that she would survive the operation. The wound was flushed with a 1 to 6,000 corrosive sublimate solution, dusted with iodoform, and dressed with sublimate gauze, a drainage tube being put into place, and the whole covered with cotton and a roller bandage. She was put in bed at 1:30 p. m.; temperature 101° ; pulse 125; extremities cold. Hot-water bottles were placed at the feet, and every two hours she was given an injection of strychnia and whiskey. The after treatment was long and tiresome; temperature at 6 p. m., 100° ; pulse 120; and at 8 p. m., 110; extremities warm; reaction from ether good; vomited considerably; slept from 12:30 a. m. to 5 a. m. Frequent vomiting continued for six days, or until June 2, and for twelve days thereafter the temperature varied from $99\frac{1}{2}^{\circ}$ to 101° ; pulse from 80 to 120; sometimes weak and intermittent, and at other times full and strong. Could retain no food in her stomach, but was nourished by enemata. At first dressing quite a quantity of pus came from wound, but there was no odour. During the first seven days she remained in a state of almost constant lethargy, uttering no sound and apparently recognising nothing. On the eighth day, when Dr. Bowen called her by name, asking her if she knew him, the response was by quite a firm pressure of the hand. On the ninth day, June 4, and for several days thereafter, when asked a question, the answer would be "No" or "Yes, dear," placing her hand upon her head, at the same time giving utterance to the word "pain," but not conscious of what she was doing. On June 7, when asked how old she was, she would shake her head, indicating she did not know, but when told, said "that's right."

The wound healed kindly and improvement in her general symptoms continued gradually, but slowly, to a complete recovery of the mind and from the paralysis of face, arm, and leg. The hearing in that ear, as will be surmised, is *nil*; vision normal; but at rare intervals she will say funny things, as if she did not realise what she was saying.

I have been unable to discover a parallel case in literature and doubt if there is one. It was seen by a large number of well-known physicians, but none could understand the existing condition, and the greatest mystery of all is the recovery. Another peculiar feature is the fact of her being about four months pregnant, and through it all did not abort. The mental condition was probably due to the abscess and pressure on the brain, which occasionally occurs in such cases.

THE SURGERY OF TUBERCULOSIS OF THE PERITONAEUM.

By PARKER SYMS, M. D., of New York County.

October 13, 1897.

In a large proportion of cases of tubercular peritonitis simple laparotomy will produce a permanent cure.

In the whole domain of surgery there is no fact more remarkable than the one just stated, and it is peculiar and without analogy.

For many years this phenomenon has been observed in isolated instances, and it was simply regarded as a coincidence, and it is not until rather lately that simple laparotomy has been recognised and advocated as the proper treatment for this form of tuberculosis.

As far as I am aware, the first English monograph devoted to the subject was written by Van de Warker of Syracuse in 1887. In 1890 König wrote an important paper on the subject, reviewing the literature and giving an analysed tabulation of 131 cases. About the same time William Osler of Johns Hopkins gave the subject special mention in a paper on tubercular abdominal tumors. In November, 1890, I read before the New York Surgical society a paper entitled "The Influence of Laparotomy upon Tuberculosis of the Peritonaeum," from which I shall take the liberty of quoting later on.

These were among the earlier contributions devoted to the subject. At the time of my first writing the literature consisted almost entirely of reports of cases in which laparotomy had been performed for a mistaken diagnosis, or as a means of making a diagnosis, and in which cure had thus been brought about accidentally. Now, medical literature is full

of reports of cases in which the operation has been done as a recognised means of treatment.

Since this subject has been widely discussed and investigated it has awakened the interest it merits, and, the phenomenon being as yet unexplained, it has resulted in the advancement of a variety of theories as to why simple laparotomy should cure such an extensive and malignant disease. I shall enumerate a few of these.

1. It has been claimed that the good result has been due to the use of chemical disinfectants.

2. The result has been attributed to the use of drainage.

3. Some claim that cure has been produced by the exposure of the abdominal cavity to sunlight and air.

4. That cure depends upon the removal of ascitic fluid and the thereby altered blood circulation.

5. That by the accidental introduction of bacteria a toxalbumin is produced which is fatal to the tubercle bacilli.

6. That the opening of the abdomen and the operative handling of the organs constitute a traumatism which establishes a fibrinous peritonitis, resulting in the encapsulation of the tubercle bacilli, and their arrest.

7. That the cure is owing to the advent of leucocytes, and is the result of phagocytosis.

8. That the mere opening of the abdominal cavity by an incision brings about a physiological change in the peritoneum which in some way makes it cease to be a proper soil for the growth of the tubercle bacilli.

No one of these theories can as yet be demonstrated to be true, and some of them may readily be discarded.

That cure does not depend upon the use of disinfectants is shown by the fact that long series of cases where no such agents were employed, show a slightly higher percentage of cures than do a series of cases where disinfectants were used.

That the result is not brought about by the relief of pressure accomplished by the withdrawal of ascitic fluid and the consequent improvement of the blood circulation, is shown in cases in which the fluid has been removed by tapping

without benefit to the patient, and in which subsequent incision has been followed by cure.

That drainage is not the means of cure is shown by the fact that cases get well without it, and that cases do better without it than with it.

The other theories which I have stated can hardly be either proved or disproved, but it should be borne in mind that we have no analogy to this phenomenon in other parts of the body. For instance, one will hardly expect to cure a tubercular joint disease by exposing it to sunlight and air. In fact, I think that we are forced to the conclusion which Tait arrived at, namely, that the opening of the abdomen produces a change in the physiological character of the peritonaeum which makes it able to overcome and destroy the tubercle bacillus; but this is merely begging the question, and I confess that I feel that this subject presents a riddle which is still unsolved.

When I wrote my paper of 1890 I stated certain conclusions at which I had arrived, and as my subsequent study and experience have tended to confirm my views as then expressed, I take the liberty of quoting them from that paper. The conclusions as set forth are as follows:

“1. That the danger of the operation is very slight (the death-rate being below 3 per cent.).

2. That sepsis is not as likely to occur in these peritonaea as in laparotomy on healthy ones, on account of the pathological changes which have taken place in the membrane.

3. That tubercular infection of the wound does not occur.

4. That disinfectants are useless, and that drainage should not be used, as it is likely to result in a permanent sinus.

5. That in unsuccessful cases the operation at least does no harm. Most of the patients who have died after the operation have succumbed to a general tuberculosis, or to tuberculosis of some other organ.

6. That established—not advanced—pulmonary tuberculosis is an indication for, and not against, the operation, for

the improvement gained enables the patient to better resist the phthisis, and if this latter be but incipient, recovery may take place.

7. That laparotomy is the proper form of treatment for these cases. In some unknown way it exerts a beneficial influence upon the disease, resulting in cure in a large proportion of cases, and marked improvement in nearly all."

To confine myself strictly to my text as set forth under the title of this paper, I shall say but little except as relates to the treatment of this disease.

Pathologically we recognise three varieties of peritoneal tuberculosis, as classified by Aldebert: First, the ascitic; second, the fibrous; third, the ulcerous; or perhaps they may be better expressed as the ascitic, the fibrino-plastic, and the caseous or suppurative. These represent stages of the disease rather than distinct varieties, and are frequently found associated in the same case. When the ascitic and the plastic are combined we often have localised encysted fluid which may readily be mistaken for cystic tumors. So it is when the ulcerous or caseous form is encapsulated by localised adhesions; the mass can often be felt as a distinct tumor, and the diagnosis is greatly obscured.

Clinically we may recognise two varieties, first, with ascites, and second, without ascites, *i. e.*, either the fibrous or the ulcerous. The peritonitis which is a part of an acute miliary tuberculosis, is not amenable to surgical treatment, and is not considered in this paper.

Treatment.—Feeling assured, as I do, that laparotomy is the cause of cure in cases which recover, and that the good result is not brought about by topical medication, by irrigation of the cavity, or by drainage, I recommend as simple and safe a method of operating as possible. I believe that the incision should be large enough to allow of satisfactory exploration of the abdominal cavity. When hydrops exists the fluid should be fully evacuated. When there is an encysted mass consisting of fluid, or of granulation tissue, it is well to separate the adhesions and carefully sponge out

the cavity, provided too much tearing and bleeding will not result, otherwise it is better not to make much manipulation.

It must be borne in mind that in most of the cases reported prior to 1892, cure had resulted from simple exploratory laparotomy. In most of these instances the disease was not recognised until the abdomen was opened, and when its nature was ascertained nothing more was done except to close the abdominal wound, as these cases were considered to be inoperable, and when cure resulted it was a surprise to the operator.

When possible the original focus of the disease should be removed. This will often be the case when the female pelvic organs, or the appendix vermiformis is the site.

I am convinced that the more simply and rapidly the entire operation is performed, the better will be the result, and I advise against irrigation or attempted medication of the abdominal cavity.

Drainage of the abdomen does nothing favourable for these patients, and it will often result in establishing a permanent fistula, and it always delays the healing of the wound, which is a very serious thing for this class of patients. It should not be employed.

The wound should be closed by suture, and convalescence from the operation established as soon as possible.

No plan of treatment of any form of tuberculosis is complete that does not include careful attention to the patient's general condition. As soon as possible these patients should be gotten out of town, and under the best possible hygienic conditions.

Many papers have been published on this subject, and several hundred cases are on record. Statistics as to cure of course vary according to different authors. Some claim cures in as high a ratio as 80 per cent., some only as much as 24 per cent. Analyses of these reports show that the mortality from the operation is below 3 per cent. Marked improvement occurs in about 80 per cent. of cases, and a

permanent cure is effected in about 30 per cent. of all cases operated upon.

The appended is a list of some of the important literature on the subject:

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DISCUSSION.

DR. SWAN, of Saratoga county, said that while at Johns Hopkins Hospital, he had seen about ten cases of tuberculous peritonitis in the service of Dr. Osler. Dr. Osler claimed that a large number of these cases went on to recovery without operation. He had been able to follow a few of these, and had confirmed this statement. Subsequently, he had seen twelve cases of tubercular peritonitis operated upon in the same hospital by Dr. Howard Kelly. The practice of the latter was to do a simple laparotomy, and close the wound without drainage. Dr. Kelly claimed that only about 50 per cent. of the cases were cured; *i. e.*, did not have a recurrence for five or six years, although they all left the hospital improved. He would like to ask Dr. Syms what he meant by the term "cure."

The speaker said that he had recently had under his care a case of tuberculosis of the peritonaeum confined to the pelvis—a very rare condition. A lady, sixty-two years of age, had come under his care about August 1. She had a good family history, had been married twenty-six years, but had never been pregnant. The menstrual history was perfectly normal. For two years she

had had pain and distress in her pelvic organs, and had noticed more or less interference with the functions of the rectum and bladder. At the time he had first seen her, she had been suffering a great deal of pain in the bladder, and this viscus would retain only a small quantity of urine. Examination showed a very hard mass projecting into the posterior wall of the vagina. Under ether, he ascertained that this mass filled the pelvis and pressed upon the rectum. An exploratory operation was advised and performed. She was so well nourished and there was such an entire absence of a history of tuberculosis that he had not suspected this condition. At the time of operation, he found several loops of intestine adherent by "cystic" peritonitis. Three of the loops of intestine were studded with miliary tubercles, which were firmly adherent to the area of cystic peritonitis. The abdomen was closed without drainage. She recovered perfectly from this operation, and just four weeks later he opened the main cyst through the posterior wall of the vagina, dilating the incision so as to admit the introduction of two fingers. He found a large cavity containing about one quart of caseous material. This was evacuated, and the cavity packed with iodoform gauze. It was now ten days since this operation, and the patient's pulse and temperature were both normal. The case was interesting as showing that the peritoneum could protect itself in cases of this kind. The aetiology was also one of great interest. Dr. Williams of the Johns Hopkins Hospital had written upon this subject in the Hospital Reports for 1891, and had shown that between forty and fifty per cent. of cases of tuberculous peritonitis originated in the tube. He spoke of the current passing from the lower part of the pelvic peritoneum into the fibrinated extremities of the Fallopian tubes. He and other observers had found free tubercle bacilli in the tubes.

DR. SYMS said he thought the term "cure" might be used in this form of tuberculosis as well as in every other form of tuberculosis, although it seemed very doubtful if a perfect cure were ever established. The term was used as in the cases of malignant neoplasm. Koenig had been one of the first to write upon this subject, and he had stated that patients should go without relapse for two years before they could be fairly looked upon as "cures." Dr. Syms said that, according to this standard, which seemed to him a fair one, there were about 24 per cent. of cures in his own series of cases.

DR. H. D. DIDAMA, of Onondaga county, asked if in those cases in which there was no evidence of effusion, yet in which the medical attendant felt satisfied of the existence of tuberculous peritonitis, Dr. Syms would recommend laparotomy.

DR. SYMS replied in the affirmative.

DR. ELY VAN DE WARKER, of Onondaga county, said he had been especially interested in tuberculosis of the peritonaeum, and believed that he had had the honour of introducing this subject to English literature. His paper had been presented to the American Medical Association, he thought, in 1883. It was on "The Cure of Tuberculosis of the Peritonaeum by Laparotomy." His attention had first been called to this matter by blundering upon a case under the supposition that it was an encysted hydrops of the peritonaeum. If he recollected correctly, Dr. Didama had been present at the operation. The patient was alive to-day. Regarding the operation, the speaker said that tuberculosis of the peritonaeum bore drainage of the cavity very badly. He had seen disastrous results from drainage, but it was sometimes necessary. It was rare to find pus associated with tuberculosis of the peritonaeum, but, when it did occur, there would be pus accumulations beneath the fascia of the pelvis and in the direction of the bones, generally pointing towards the vagina. For this reason, the pus collection was often readily reached through the roof of the vagina. He was able to answer Dr. Didama's question, because a recent case seen with Dr. Cheesman was one in which there was no effusion. The patient was making such satisfactory progress that he had reason to believe that the final outcome would be a fortunate one. He had done such an operation many years ago, and removed some of the pelvic organs, also with favourable results. In this case, a bridge extended from side to side in the upper portion of the true pelvis. It was tied off and removed. The girl lived for many years afterwards, and finally died of intestinal obstruction following an operation for a cyst of pelvic origin. The good results obtained from the surgical treatment of the peritonaeum, he thought, were due to free flushing of the cavity. He spoke of cases of ascitic accumulation, for it was almost impossible to remove this by prudent sponging.

DR. SYMS, in closing, said that he thought the subject should be viewed very conservatively, yet laparotomy certainly seemed to afford a practical cure of tuberculosis of the peritonaeum. He

could not at all agree with those who tried to explain these cases as mere coincidences. In the successful cases the effect was so marked that it was almost impossible to believe in this theory. In the first case that had called his attention to the subject, an adult coloured man had a large abdominal tumor of undetermined origin. He was seen by a number of eminent surgeons without any new light being thrown upon the case. The operation revealed a very general tuberculosis of the peritoneum, starting as a tuberculosis of the mesenteric glands. Thinking the case inoperable, the peritoneum had been handled very little, and the abdomen had been at once closed by sutures. The man's condition at the time of the operation had been exceedingly bad, yet in a few days the improvement was very remarkable. The tumor consisted of a large mass of adherent intestine and omentum, and this rapidly decreased in size. In considering the curability of tuberculosis without operation, we should bear in mind that in a very large majority of cases it was an utter impossibility to make a positive diagnosis without opening the abdomen. His earlier cases were almost entirely those in which no diagnosis of tuberculosis of the peritoneum had been made prior to the operation.

TETANUS.

By FREDERIC S. DENNIS, M. D., of New York County.

October 13, 1897.

Tetanus is an acute, infectious disease caused by the presence of the tetanus bacillus and its toxins. It is a disease very common among the negroes, the South Sea Islanders, and the Hindoos. The bacillus of tetanus was discovered by Nicolaier in 1885, and the first pure cultures were made by Kitasato in 1889. The bacilli of tetanus are anaërobic and appear in the form of straight, short or long, rods, at one end of which a club-shaped enlargement exists. The bacilli grow best at the temperature of the body, but will, under certain conditions, develop at a much less temperature. The spores of tetanus resist death for a long time. The living spores have been found by Henrijean upon a piece of wood that had been previously taken from a wound in a boy eleven years before, and who had died from tetanus.

The *incubation period* may be several hours or days. The time varies according to the peculiar susceptibility of the patient. The toxin of tetanus is a most virulent poison. One three-hundredths of a grain will kill a human being, while two grains of atropine is the minimum fatal dose, and one half to one and one-half grains of strychnia. Welch mentions the fact that Nicolaier pricked his finger with an hypodermatic needle, the syringe of which contained a filtrate of the tetanus culture. Simply from the moisture on the point of the needle enough of the poison was held to cause tetanus with all the distressing phenomena.

The *frequency* of tetanus is shown by the fact that in New York city there are about sixty cases of acute and chronic tetanus every year, and that there are also about

fifty cases of tetanus neonatorum, thus making in round numbers about one hundred cases annually in this city. In the year 1890, statistics have shown that there were about two thousand cases reported in the United States.

The *duration* of the disease is subject to wide variations. The most important point to consider is the fourteenth day, since that day seems to have an important influence on the result. In a series of cases collected, it was shown that after the fourteenth day the mortality was 16 per cent. as compared with those cases whose duration was less than fourteen days, when the mortality arose to 91 per cent.

Age is an important factor to consider in regard to individual resistance. By common consent, twenty-five years is established as a point from which some interesting data have been observed. In acute tetanus, patients over twenty-five years showed a mortality of 75 per cent.; while those under twenty-five years, a mortality of 67 per cent. In chronic tetanus, patients over twenty-five years of age showed a mortality of 83 per cent.; while those under twenty-five years, a mortality of only 10 per cent. Thus it follows in chronic tetanus in a patient over twenty-five years of age, the mortality is eight times greater. In all cases of tetanus the mortality is diminished in proportion to the length of the period of incubation, taking twelve days as the point from which to compare the results.

The *geographical distribution* of the disease is a matter of great interest to the surgeon. Hoffman has collected some interesting data upon this point. For example, he shows in a table the number of cases of tetanus in different localities, and the mortality of the disease in those places. In addition to these facts he also shows the frequency of the disease in the two sexes, and also at which age the disease was most common.

MORTALITY FROM TETANUS AND TRISNUS NASCENTIUM, U. S., 1890.

	MALES. No.	FEMALES. No.	TOTAL. No.
Under 1	879	614	1493
1 to 2	13	6	19
2 to 3	4	5	9
3 to 4	7	8	15
4 to 5	4	4	8
Total under 5	907	637	1544
5 to 9	50	22	72
10 to 14	61	17	78
15 to 19	30	13	43
20 to 24	27	10	37
25 to 29	22	11	33
30 to 34	21	13	34
35 to 39	25	12	37
40 to 44	16	11	27
45 to 49	17	4	21
50 to 54	12	8	20
55 to 59	13	8	21
60 to 64	13	6	19
65 to 69	8	2	10
70 to 74	4	4	8
75 to 79	3	2	5
80 to 84	0	0	0
85 to 89	1	1	2
90 to 94	0	0	0
95	0	0	0
Unknown	8		8
Total	1238	781	2019

The mortality of the disease, independent of the incubation period, in certain states of the Union is of interest to this Association, since there are many here at this meeting who reside in other states than New York.

Hoffman has shown that some valuable and reliable research has been made in this direction in many of the states; but for convenience and brevity, only the statistics of Connecticut, Massachusetts, and Louisiana will be utilised.

MORTALITY FROM TETANUS IN CONNECTICUT, 1876-1895.

					Tetanus.	Trismus Nascentium.	Total.
1876	.	.	.	.	15		15
1877	.	.	.	.	16		16
1878	.	.	.	.	12		12
1879	.	.	.	.	26		26
1880	.	.	.	.	23		23
					<hr/>		<hr/>
1876-'80	.	.	.	.	92		92
1881	.	.	.	.	18		18
1882	.	.	.	.	23		23
1883	.	.	.	.	25		25
1884	.	.	.	.	13	6	19
1885	.	.	.	.	18	14	32
					<hr/>	<hr/>	<hr/>
1881-'85	.	.	.	.	97	20	117
1886	.	.	.	.	18	5	23
1887	.	.	.	.	22	6	28
1888	.	.	.	.	27	13	40
1889	.	.	.	.	17	9	26
1890	.	.	.	.	17	14	31
					<hr/>	<hr/>	<hr/>
1886-'90	.	.	.	.	101	47	148
1891	.	.	.	.	14	7	21
1892	.	.	.	.	16	13	29
1893	.	.	.	.	24	11	35
1894	.	.	.	.	11	6	18
1895	.	.	.	.	23	10	33
					<hr/>	<hr/>	<hr/>
1891-'95	.	.	.	.	88	47	136

MORTALITY FROM TETANUS PER 1,000,000 OF POPULATION.

1876-'80	30.9
1881-'85	36.2
1886-'90	41.9
1891-'95	35.1

TETANUS.

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MORTALITY FROM TETANUS IN CONNECTICUT BY COUNTIES, 1885-'95.*

	Pop., 1890.	Ave. Death from Tetanus.	Rate per 1,000,000
Hartford County,	147,180	3.8	25.8
New Haven "	209,058	15.1	72.2
New London "	76,634	2.4	31.3
Fairfield "	150,081	4.2	27.9
Windham "	45,158	0.4	8.9
Litchfield "	53,542	1.2	22.4
Middlesex "	39,524	1.2	30.4
Tolland "	25,081	0.2	8.0
<hr/>			
State,	746,258	28.7	38.5

MORTALITY FROM TETANUS IN LITCHFIELD COUNTY, 1885-'95, BY TOWNS.

	No.	Years of Occurrence.
Plymouth	3	1885, '86, '88
Washington	1	1886
Roxbury	1	1888
Winchester	2	1888, '95
Woodbury	2	1888, '94
Litchfield	2	1891, '93
New Milford	1	1893
<hr/>		
County of Litchfield	12	

MORTALITY FROM TETANUS IN MASSACHUSETTS, 1860-1895.

	No.		No
1860	17	1880	23
1861	9	1881	18
1862	17	1882	58
1863	9	1883	34
1864	11	1884	22
<hr/>		<hr/>	
	63		155
1865	11	1885	17
1866	13	1886	20
1867	14	1887	28
1868	14	1888	24
1869	18	1889	22
<hr/>		<hr/>	
	70		111

* Exclusive of 1887.

	No.		No.
1870	19	1890	25
1871	18	1891	26
1872	18	1892	28
1873	12	1893	36
1874	24	1894	36
	<hr/> 91		<hr/> 151
1875	19	1895	34
1876	20		
1877	20		
1878	12		
1879	10		
	<hr/> 81		

RATE PER MILLION OF POPULATION, 1860-1895.

1860-'64	10.1
1865-'69	10.4
1870-'74	11.9
1875-'79	9.5
1880-'84	16.8
1885-'89	10.8
1890-'94	12.9
'95	13.6

MORTALITY FROM TETANUS IN MASSACHUSETTS, 1885-1894.

	Males.	Females.	Both sexes.
Under 5	34	25	59
5-10	20	4	24
10-15	28	2	30
15-20	21	1	22
20-30	29	10	39
30-40	21	12	33
40-50	18	4	22
50-60	8	6	14
60-70	14	1	15
70-80	2	2	4
	<hr/>	<hr/>	<hr/>
All ages	195	67	262

MORTALITY FROM TETANUS, ETC., IN NEW ORLEANS, LA., 1867-1875.

							Lockjaw.	Tris. Nasc.	Total.
1867	.	.	.	.	.	.	128	246	374
1868	.	.	.	.	.	.	104	159	263
1869	.	.	.	.	.	.	134	136	270
1870	.	.	.	.	.	.	119	186	305
1871	.	.	.	.	.	.	79	234	313
1872	.	.	.	.	.	.	73	238	311
1873	.	.	.	.	.	.	74	256	330
1874	.	.	.	.	.	.	67	259	326
1875	.	.	.	.	.	.	66	249	315

MORTALITY FROM TETANUS, ETC., IN NEW ORLEANS, LA., 1885-1895.

				Idiopathic T.	Traumatic T.	Tris. Nasc.	Total.
1884	.	.	.	5	47	196	248
1885	.	.	.	4	69	198	271
1886	.	.	.	12	54	168	234
1887	.	.	.	5	72	167	244
1888	.	.	.	4	48	188	240
1889	.	.	.	2	90	185	277
1890	.	.	.	4	62	200	266
1891	.	.	.	4	62	168	234
1892	.	.	.	5	58	205	268
1893	.	.	.	2	63	211	276
1894	.	.	.	8	63	188	259
1895	.	.	.	4	90	173	267
1884-'95	White			.	.	.	1,575
	Coloured			.	.	.	1,479
	Total			.	.	.	3,054

The mortality of the disease in England and Wales might interest the members of this Association, since the comparison affords an opportunity to study the mortality of the disease in other countries. Hoffman has also collected data upon this point, which are of clinical interest.

ENGLAND AND WALES, 1875-1894.

Mortality per 1,000,000 of Population.

1875-'79	.	.	.	.	.	.	.	1.17
1880-'84	.	.	.	.	.	.	.	1.79
1885-'89	.	.	.	.	.	.	.	1.70
1890-'94	.	.	.	.	.	.	.	1.29

Proportion of Males and Females.

	Total.	Males.	Per cent.
1875-'79	145	102	70.3
1880-'84	234	180	80.4
1885-'89	236	171	72.5
1890-'94	191	143	74.9

MORTALITY FROM TETANUS IN ENGLAND AND WALES, 1875-1894.

	Males.	Females.	Total.
1875	22	10	32
1876	25	12	37
1877	17	10	27
1878	18	3	21
1879	20	8	28
1875-'79	102	43	145
1880	25	8	33
1881	48	13	61
1882	37	10	47
1883	41	10	51
1884	29	13	42
1880-'84	180	54	234
1885	31	11	42
1886	41	10	51
1887	29	13	42
1888	36	15	51
1889	34	16	50
1885-'89	171	65	236
1890	32	7	39
1891	29	18	47
1892	37	8	45
1893	23	9	32
1894	22	6	28
1890-'94	143	48	191

There are *three varieties* of tetanus: The acute, the chronic, and tetanus neonatorum.

Tetany must not be confounded with tetanus proper, since the former is a pure neurosis and chiefly affects young peo-

ple. It is a disease that follows certain surgical operations, notably thyroidectomy. The writer has seen it in connection with typhoid fever. Tetany does not usually affect the jaw, at least until late in the progress of the disease. Compression upon the main nerve of an affected extremity will often produce a convulsion in that extremity. This is a most important diagnostic test, to which the name Trousseau's sign has been given.

Tetany is a dangerous complication in a wound, and the remedy which gives the best results is the injection of the thyroid extract.

The *signs* and *symptoms* of tetanus vary somewhat according to the variety of the disease.

In acute tetanus the disease begins ordinarily within one week of the receipt of the injury. The onset is manifested usually by a slight rigour or chill followed by rigidity of the cervical muscles which quickly extends to those of the jaw. These symptoms are soon followed by a difficulty in deglutition and the patient is unable to touch the sternum with the point of the chin. The abdominal muscles are next affected and the patient assumes the position of *emprostotonos*. Instead of the abdominal muscles the dorsal muscles may become involved and then the patient assumes the position of *opisthotonos*. It occasionally happens that the lateral muscles of the body become involved, in which case the position of *pleurothotonos* is assumed by the sufferer. In rare cases both the abdominal and dorsal muscles are simultaneously affected and the patient becomes very rigid, and to this condition the term *orthotonus* has been given. These symptoms usually occur during the first day and upon the advent of the second day the jaws become firmly fixed, and nearly all the muscles become involved except those of the upper extremities. At this stage of the disease the facial muscles are involved and the patient assumes a most painfully ludicrous smile to which the term *risus sardonicus* has been given. Internal strabismus and ptosis are present. The muscles become so rigid that any attempt to forcibly

straighten them may cause their rupture. Articulation is now indistinct or lost altogether, and retention of urine and incontinence of faeces soon supervene. The body becomes bathed in perspiration and during the spasms cyanosis occurs with foaming at the mouth.

The pulse becomes very rapid and feeble due to the action of the toxins on the circulation, and there is a slight rise of temperature at first which goes steadily up until it reaches 105°, or even 110°, due to the action of the toxins upon the heat centres. Mucus collects in the pharynx, owing to an inability on the part of the patient to expectorate.

The *signs and symptoms* in *chronic* tetanus usually appear within the second or third week and they are very similar to those described in connection with acute tetanus and in practically the same chronological order. The signs are, however, not so severe as in acute tetanus, and between the convulsions there are periods during which the patient can obtain sleep and take nourishment.

Tetanus Neonatorum is a most fatal disease. It occurs within a week after birth. The cause of the disease is the presence of the bacillus tetani with its toxin. The disease originates by infection through the use of unclean scissors with which the cord is severed, or from the use of infected tape or thread with which the cord is tied, or from the application of non-sterilised dressings with which the stump is covered. Possibly the infection may originate from the nurse or the physician whose surgical toilet has been overlooked.

The frequency of tetanus neonatorum is shown by the fact that in New York city from 1868 to 1896 there were 1,341 fatal cases. These occurred chiefly in the hands of midwives and careless physicians but since the aetiology has been pointed out and the way of preventing this disease has been shown, it has become very infrequent.

The *incubation* of the disease is from three to four days; the longer the period of incubation, the better the prognosis.

The signs and symptoms consist of rigidity of the cervical

and maxillary muscles, tonic spasm of the muscles of the jaw, thus preventing the opening of the child's mouth; the contraction of the abdominal, dorsal, or lateral muscles somewhat in the order as is observed in acute or chronic tetanus; later on, the spasm of the accessory muscles of respiration which soon causes death.

The *treatment* has usually been of no avail. Recently these cases have been treated with antitoxine in doses graduated to meet the requirements of the case. Within a short time there have been five successful cases of this variety of tetanus cured by antitoxine.

Tetanus must be differentiated from tetany, strychnia poisoning, hysteria, and hydrophobia.

Tetany is a pure neurosis, and the tonic contractions usually affect the upper extremities which are seldom, if ever, involved in traumatic tetanus. If the jaw becomes affected it is last, instead of first as is the case in tetanus. The lesion in tetany is in the gray matter of the cord. This disease is often a complication of thyroectomy as well as certain infective fevers. Trousseau's sign is pathognomonic and the condition is relieved often by the thyroid extract.

Strychnia poisoning has some peculiar diagnostic points. The muscles of the jaw are the last affected, the reverse of tetanus. The eyes remain wide open and the retina is hyperaesthetic. To the patient all objects appear green in colour. Muscular relaxation occurs between the convulsions, and the patient is very restless as compared with a quiescent state so characteristic of tetanus. Hypersecretion of saliva is also characteristic.

Hysteria, or hysterical tetanus, is a condition caused by emotion or traumatism. The peculiar feature of this disease is that the patient never injures himself or herself. These patients never even bite the tongue. If they fall, they fall so as not to hurt themselves and if they attempt bodily injury a way of escape is always present. The eyes are closed, the arms are generally tossed up over the head, a

most important clinical symptom, and consciousness is not lost until after the first convulsion. In the intervals between the convulsions the patients generally have crying spells.

Hydrophobia has the history of a dog, cat, fox, wolf, or horse, bite. The muscles of deglutition and respiration are chiefly affected. Great restlessness and jactitation are present with mental depression. The spasms are clonic in character but are not followed by extreme rigidity. Dyspnoea is usually present, and is caused by a spasm of the muscles of the larynx. Preceding these symptoms there is generally some change which is apparent in the cicatrix itself.

The *prognosis* in acute tetanus with a short period of incubation is very grave. The mortality has been estimated as at least 80 per cent. before the introduction of antitoxine.

In chronic tetanus, with a long period of incubation, the outlook is more hopeful since the mortality has been estimated at about 40 per cent. before the introduction of antitoxine. The reduction of the mortality since antitoxine has been employed will be discussed in connection with the use of the serum, when the treatment of the disease is considered. The *fourteenth* day is a critical one in the progress of the disease, and when this can be reached the prognosis is more encouraging.

The *treatment* of tetanus has recently been attended with excellent results. These results have been brought about by the introduction of antiseptic surgery, by the administration of anaesthetics, and finally by the adoption of a new form of serum therapy. In addition to these threefold measures, the employment of physiological antidotes has also been of great value. These results are not due to any one of these measures, but to a judicious combination of all. The recent introduction of antitoxine has so occupied the attention of surgeons that the older remedies have been lost sight of and in this step much of value in the treatment of tetanus has been overlooked. The writer will endeavour to

present the subject in such a manner as to embrace what is found most valuable among the older remedies and to add the sum of our knowledge in regard to antitoxine and to call attention to the importance of antiseptics.

A discussion of the treatment of tetanus will, therefore, embrace the measures applicable to the constitutional management of the disease and also the measures applicable to the wound itself.

The *constitutional* treatment consists in the employment of physiological antidotes among which may be mentioned chloroform, chloral, bromides, morphine, physostigmine, antimony, and nitrate of amyl.

Chloroform is one of the most important remedies in the treatment of tetanus. It relieves the excruciating pain, diminishes the intensity of the convulsions, and prevents the horrors of suffocation. The use of chloroform is attended with great danger and every precaution should be taken to protect the patient's life during the administration. Every form of stimulants should be in readiness to use in case of emergency. It has been shown that chloroform has reduced the mortality of the disease about 10 per cent. This fact taken in connection with the relief of suffering which it affords demonstrates the great utility of the remedy.

Chloral has a specific action on the motor tract of the spinal cord and by depressing it ameliorates the suffering. Chloral, in order to be effectual, must be given in as large doses as possible and its effects must be watched. If the administration of the drug by the mouth causes convulsions, it can be administered in the form of a suppository. If this method of administration is ineffectual, owing to the expulsion of the suppository by a rectal spasm, the drug should be introduced during chloroform narcosis. It has been shown that the mortality of tetanus was 6 per cent. less in those cases in which the drug was used in comparison with the mortality of those cases in which the drug was not used.

Bromides are also useful; especially in connection with chloral, since they produce cerebral anaemia, and act as a

sedative upon the cord itself. The bromides also act as a depressant to the peripheral sensory nerves.

Morphine relieves the pain, and when given in large doses, diminishes the reflexes, induces sleep, and relaxes the tonic contractions of the muscles.

Physostigmine has likewise a depressant action upon the motor tracts of the cord. It, in addition, produces relaxation of the muscles and diminishes the reflex excitability of the cord.

Antimony has been employed with beneficial results by Bross of Costa Rica. He gave the drug in dose of from one eighth to one sixth of a grain every two hours in conjunction with morphine. The combination of the two drugs prevented vomiting which follows the administration of the antimony alone. The action of antimony is to control the convulsions and to diminish the reflexes.

Nitrate of amyl has been employed with benefit. The drug should be administered during the intervals between the spasms, as it can not be inhaled during the convulsion. The drug acts as a powerful sedative to the motor tract of the spinal cord.

In the use of these physiological antidotes it has been found best to use them in rotation and not to persist too long with any one. By a judicious rotation the best effect is produced.

The *chemical* antidotes are of no value since such powerful doses are required to produce any effect. Besides the employment of these antidotes, the surgeon can do much to relieve the sufferings of the patient. He should avoid making the slightest disturbance while entering or remaining in the sick room. He should prevent all draughts of air, and keep his patient in a quiet and darkened room. He should plug the patient's ears to prevent any irritation of his auditory nerve. It has even been suggested to wrap the patient in cotton to thus avoid the slightest reflex excitability. Too much stress cannot be placed upon the enforcement of absolute quiet.

The *local* management of the wound is a most important

feature in the treatment of tetanus. This is shown by the fact that the majority of cases of tetanus proceed from the development of the spores rather than from the bacilli,—and that the spores are more likely to develop under conditions of a mixed infection. The wound, therefore, should be made aseptic at the earliest possible moment since the destruction of the microbes of suppuration retard the development of the spores. The limb should be shaved and disinfected and then the wound itself be made aseptic. If there are any scabs found on the wound they should be removed and burned, since the bacilli of tetanus have been observed embedded in them. Sternberg has shown that a 5 per cent. solution of carbolic acid, or a 1 to 1,000 solution of bichloride of mercury to which is added a one half per cent. of hydrochloric acid, will destroy the spores in ten minutes. These solutions are, therefore, to be recommended.

Fizzoni and Catauni suggest a 1 per cent. solution of nitrate of silver which they have demonstrated will destroy both the bacilli and the spores in one minute.

The *actual* cautery has also been suggested; but the employment of this necessarily calls for an anaesthetic.

Whichever of these methods is employed for the destruction of the bacilli and spores a one half of 1 per cent. solution of iodine trichloride should be used in order to destroy the action of the toxins in the wound. It is claimed that the iodine trichloride will neutralise the action of the toxins in less than an hour.

The question of amputation may arise in connection with the local management of the wound. This should only be done when the wound is so situated as to render it impossible to disinfect. It is better to sacrifice a finger or a toe, or even an arm or leg, than to endure the agony of tetanus with a risk of loss of life.

Attention should be directed to the treatment of a punctured wound, since this variety of wound is often most dangerous. This wound should be incised to the bottom and then cauterised and disinfected and properly drained.

The *injection of antitoxine* was suggested by Fizzoni and Catauni. Antitoxine can be used for the purpose of immunising the patient, or as a remedy during the progress of the disease. Antitoxine as an immunising agent possesses great value. It is in this department that antitoxine shows a uniform result. The great difficulty at present among surgeons is to recognise the cases which should be immunised. All agree that a patient in whose wound the bacilli or the spores are found, should be immunised at once, and if this step is taken the prognosis is uniformly good. All do not, however, agree that a patient should be immunised in whom a wound exists in which there is no evidence that the bacilli of tetanus have entered. Cases coming under this category should be immunised, provided the wound is torn or lacerated and one into which dirt has been ground and in a locality where tetanus is common. The character of the wound, the presence of dirt in it, and the prevalence of tetanus in the community are, therefore, reasons urging immunisation in every case.

To illustrate more forcibly, it is said that a French surgeon named Bazy had four fatal cases of tetanus in his practice in one year. He then began injecting 20 c. cm. of antitoxine into all his patients who had received lacerated wounds in which dirt had been found. Since he began this practice he has had no case of tetanus. As another illustration of the value of immunisation, Lambert mentions that a veterinary surgeon named Nocard immunised 375 animals, and no case of tetanus developed, while he had 55 cases of tetanus in animals living in the same environment.

Antitoxine does not affect in any way directly the life of the bacilli of tetanus or the spores. Both the bacilli and their spores, when they enter the tissues through a wound, live for only a few days or weeks. In these cases antitoxine is given for the purpose of preventing the symptoms which would be caused by the toxins during the first few days, and it will destroy the action of the toxins. If, however, some of the spores remain quiescent, they may only

develop into bacilli at a time when the antitoxine has been eliminated, and if they then develop into bacilli, the toxins produced will be absorbed and cause symptoms just as if they had received no immunisation dose of antitoxine. For this reason the immunising dose should be repeated after the first week, and again after the second week, and even after the third week. The immunising dose is about 10 c. cm., or about half of that required during the progress of the disease.

Antitoxine as a remedy during the progress of the disease has an important influence upon tetanus, but not to the same extent as when employed for immunising purposes. Welch believes that the longer the period of incubation, the better will be the results from the use of antitoxine, and that this remedy is of little value with a short incubation period; that is, after seven days, or after convulsions have been established. When antitoxine is used under these conditions, it should be continued long after the symptoms of tetanus have subsided. The writer feels convinced that the treatment of tetanus by antitoxine would have even a better showing, if the serum were used in a proper way; for example, one surgeon reports three cases of tetanus treated by antitoxine, but in all three the serum was only given once in one case, twice in another, and three times in the third. They all succumbed, but the test was not a fair one, as the remedy was improperly used.

Under such conditions the serum is of no avail, and the conclusions drawn from such treatment are erroneous, because the antitoxine was not used in large enough doses or persisted in for a sufficient time, or employed early enough. Such treatment would bring any remedy into disrepute. The dose should be at least 20 c. cm., three times daily, and in some cases even larger.

Lambert has also called attention to a most important point in the treatment of tetanus, and that is the great care the surgeon should exercise after all symptoms have disappeared. For example, absolute quiet should be insisted upon

long after the patient has become convalescent, since he knows of four deaths recently in this city where the patients were suddenly awakened out of a sound sleep and a convulsion was brought on, from which the patients died. The necessity of not discontinuing the antitoxine too soon is illustrated by a case which Mason reported, in which the patient steadily improved and was so much relieved that on the eighth day the injections of antitoxine were discontinued. The improvement continued during the ninth day, but as soon as the effects of the antitoxine had passed away, the patient relapsed into a delirium, and died on the eleventh day.

Failures to cure tetanus by antitoxine are, therefore, to be attributed to too small doses and to doses not repeated often enough. Finally, carelessness on the part of the surgeon in allowing the patient to be aroused suddenly out of sound sleep before all danger has passed, has been a cause of failure after any treatment.

The results which have been obtained from the use of antitoxine in tetanus are scarcely large enough at the present time to establish any fixed statistics. This fact is made more apparent when reference is made to the various statistics that have been given in regard to the mortality of tetanus when treated by the older methods. For practical purposes, however, Lambert has given the mortality as 80 per cent. for acute cases and 40 per cent. for the chronic cases, or about 60 per cent. for all cases. In the mortality of tetanus in which antitoxine was employed, Lambert reports in the acute cases the death-rate was about 75 per cent., and in the chronic cases a mortality of about 16 per cent.

Some of these cases died of intercurrent affection, others within twenty-four hours after the injections were begun, and still others, where the course was mild and the antitoxine was not used until about two weeks after the onset of the disease. These cases are, therefore, to be excluded, and where this is done there remains a mortality of 61 per

cent. for the acute cases and a mortality of 5 per cent. for the chronic cases, or about 30 per cent. for all cases treated with antitoxine.

DISCUSSION.

DR. BERNARD COHEN, of Erie county, thought that no more instructive subject could have been presented. The facts contained in the paper must have been collected with unusual difficulty, owing to the comparative rarity of the disease and the difficulty of following the cases for a sufficient length of time. He had published a case of tetanus in 1889, in which it had been estimated that he had used nearly a pound of bromide, together with very large doses of physostigmin and chloroform. For twelve days he had never left the patient, and the spasms had been frequent and exhausting. He wished that at that time the tetanus antitoxine had been at his disposal. Even now this serum could only be obtained by medical practitioners in New York city. The Pasteur Institute had been very generous in the diffusion of the knowledge it had obtained, and he saw no reason why the Pathological Laboratory of the New York State Lunacy Commission, supported as it was at large expense by the state, would not diffuse such important information throughout this state.

DR. J. C. HANNAN, of Rensselaer county, asked Dr. Dennis if it would be proper to use the antitoxine in tetanus of the newly-born.

DR. DENNIS replied that within a few days five cases had been reported in which the antitoxine, in very small doses, had been administered to children with trismus nascentium, and in all with complete success. These were the only cases in which it had been employed with success. This antitoxine could be obtained without difficulty by any medical practitioner from the New York City board of health.

DR. HANNAN said that he had understood the reader of the paper to say that a wound was necessary to the entrance of the germs, and he, therefore, could not understand why the tetanus germs should enter the system of the newly born certainly long before the falling off of the cord. It had been his misfortune to meet with two cases of trismus of the newly-born, both of which had terminated fatally.

DR. FERGUSON said that he thought one clinical fact had been clearly established, *i. e.*, that in certain regions the bacillus of

tetanus was known to generate more freely^{*} in connection with the soil. This was notably the case in some of the islands of the West Indies. It had been noted that the negress midwives, who were apt to come in contact with the soil, and who were not very careful about freeing their hands from it, were very liable to infect the umbilical cord at the time it was divided and received its first dressing. Experience seemed to show that precautions taken to avoid such infection were effective in diminishing the number of cases of tetanus of the newly-born.

MASSAGE AS AN OCCUPATION FOR THE BLIND.

By ARTHUR G. BENNETT, M. D., of Erie County.

October 13, 1897.

According to the census of 1890, there were in the United States 50,568 blind persons; in New York state the number was 4,398. I think we may fairly estimate that there has been at least a 10 per cent. increase in population since 1890, and with that increase a corresponding increase amongst the blind. This would make a total of nearly 56,000 persons, the great majority of whom are dependent upon private benevolence or public funds. From the 28th Annual Report of the New York State School for the Blind in Batavia, I quote the following passage taken from the report of Dr. Lucien Howe, the ophthalmic examiner:

The total number (of blind) in the state is 4,398. Of this entire number it is probable that only a small proportion can support themselves entirely unaided. The figures given by Superintendent William B. Wait of the New York Institution for the Blind, show that only about 7.8 per cent. of the entire blind population of the United States, even those trained in Schools for the Blind, are able to support themselves, and Superintendent Fuller of the school at Batavia informs me that 6 or 8 per cent. would be considered by him a large average of the blind of all ages in the state who are able to accomplish this.

In answer to a question bearing on this point, addressed to every superintendent of a state school for the blind in this country, I have received widely divergent estimates. The question was, "What percentage of pupils after graduation become self supporting?" For some reason not apparent, the graduates of the Southern schools seem to be more fortunate in this respect than those in the North. For instance, Mr. J. E. Ray, principal of North Carolina Institution for the Deaf

and Blind, estimates that 80 per cent. of the male white graduates become self supporting, and Mr. E. P. Becton of the Austin Institution (Texas) puts the figures at 75 per cent. of the male students. On the other hand, Mr. Frank H. Hall, superintendent of the Illinois Institution, estimates only 6 per cent. of the males and but $1\frac{1}{2}$ per cent. of the females. Mr. E. P. Church, of Michigan, without going into figures says that the number is "small." Mr. H. F. Bliss, of Wisconsin, puts the males at 20 per cent., and the females at 5 per cent. It is, however, extremely difficult to form any just estimate, as Mr. Hall remarks, in giving me his figures, "They are almost guesses." The pupils are lost sight of in a large measure after leaving school, and no figures can be considered absolutely trustworthy. There is one point about which all the gentlemen who have been kind enough to answer my questions agree, and that is, that but a small proportion of blind women become self supporting.

At present there are comparatively few avenues by which the blind can earn a living, and not one in which they can compete successfully with the seeing. In this iron age it is the weakest that goes to the wall. Blind broom makers can not compete with the large factories, and about the only way a blind broom maker can earn a living is by selling his goods to charitably minded individuals, who purchase his wares because of his infirmity. And what is true of the broom trade is also true of every trade or profession yet taken up by the blind. The element of sympathy must come into play in most instances in order for a blind person to make a living. Let me quote a few authorities: Mr. E. P. Church, of the Michigan School for the Blind, says, "No blind person can do as good work in general as a seeing person." Mr. H. F. Bliss, Janesville, Wisconsin: "Very few blind persons become expert at any line of work. An element of sympathy is necessary" (before employment is given them). Mr. W. B. Wait, of the New York Institution for the Blind, says, "It may be laid down as a fundamental proposition that persons who are deprived of sight cannot successfully follow

any skilled employment." The majority of the superintendents, who have touched on this question, find that there exists a prejudice against employing the blind.

The foregoing remarks apply perhaps with less force to the musical trades and professions than to the purely mechanical ones, but right in the threshold of this department we are confronted with the objection, that all blind persons are not musical—certainly not sufficiently so to make it pecuniarily profitable for them to make music their life work. We may take it for granted, I believe, that the misfortune of blindness does not confer upon its unfortunate victim a musical ear or temperament, any more than the loss of hearing would specially fit a deaf person to become an artist. In this belief, I am upheld by some of the foremost instructors of the blind in the country, notably Mr. G. H. Miller of Kansas, who goes so far as to say :

"In the education of the blind, music has held a very prominent position, and its importance as an educational factor has been greatly overestimated. The false notion that the blind are generally gifted with superior natural musical ability is, perhaps, the principal reason why their musical education has received undue attention. What are the facts? Inherent musical capacity is certainly not above the average of the seeing, and for reasons we cannot now present, we have no hesitation in stating that it is considerably below the average." (From a paper read at the fourteenth biennial convention of the American Association of the Instructors of the Blind, Pittsburg, 1896.)

At the same meeting Mr. Glascock of Indiana said, "I have had parents who thought their children were specially gifted in music because they were blind, and I know we have to curtail that feeling all the time." Mr. E. P. Church said he entirely agreed with Mr. Miller, and in answer to a question on this subject, writes me that probably not 10 per cent. of the pupils can profitably take up music either as a mechanical trade or as a profession. His estimate agrees closely with that of Mr. Becton and Mr. Hall.

With the mechanical trades barred to the women there are still fewer opportunities for them to become self supporting, and as far as their chances in the matrimonial market are

concerned, they are practically nil. If the amount earned by the blind man is small, that earned by the blind woman is still less.

Is there any avenue by which the blind man or woman can earn a living—honorably, not by semi-charity, but in competition with the seeing, rendering as efficient service and receiving a remuneration that will enable them to live comfortably and support not only themselves but their families? Yes, I believe so. It is my opinion that the blind can make massage their own particular profession. The blind possess some qualifications that eminently fit them to excel in this line of work. In the first place they possess that peculiar delicacy of touch bestowed by a beneficent nature to compensate in some degree for the loss of vision. While doubtless this is the result of long training and could be acquired by a seeing person, as a matter of fact a seeing person not having the necessity never does acquire the extremely sensitive fingers of the blind.

Another qualification that the blind possess is blindness itself. There is no other occupation that I can think of in which a blind person's infirmity is a positive advantage, but as a massage operator the fact that the patient can be treated without every bodily imperfection being noticed is a point not to be ignored. Most people object to expose their persons even to their own family physician, and more still object to do so before an entire stranger as the massage operator in all probability would be. If, however, the operator were blind this objection would be largely obviated. The question of cost debarbs many worthy persons from taking advantage of the benefits of massage. Its enormous therapeutic value is now generally recognised by the profession at large, but unfortunately two facts often prohibit its use,—on the one hand the expense and on the other hand, and this is particularly true of the country districts, the difficulty of obtaining an operator. It is only the well to do that can afford to pay the fees demanded by the professional masseur. Take, for example, the case of a sick wife of a

clerk or mechanic. Her sickness entails the services of a physician and the employment of some one to take care of the house. The physician decides that it is necessary for his patient's good that she shall receive massage regularly for some time, but on broaching the subject is told that it is absolutely impossible to pay a dollar or more a treatment. What with his fee and the extra expense of employing help to take the wife's place, there is not much left of the breadwinner's wages at the end of the week. But if a blind masseuse could be employed who would come and give the necessary treatment at a moderate charge, this objection would have less force. On the other hand, if nothing is said and a high priced masseuse is engaged, in all probability it is done at the physician's expense, for the masseuse, more worldly wise than he, expects her fee to be paid at once, while the physician may wait indefinitely. In small towns and villages it is absolutely impossible to obtain a masseur, except at prohibitive rates from a larger city. This valuable therapeutic measure is therefore neglected, or the patient is obliged to leave home and visit some sanitarium, in which case the patient passes out of the hands of his family physician. Nearly every small town could provide sufficient employment for a blind masseur and masseuse to the great benefit of the community at large, besides enabling the practitioner to keep his patient under his own eye, and the operators to earn an honourable living.

The field of labour is large and not yet adequately filled. Every hospital, large and small, could offer continuous employment to at least one operator. Every sanitarium could employ at least two, one of each sex; every insane hospital, private retreat, or home for the feeble-minded, needs masseurs, and Turkish baths can be counted among the institutions that require their services. Specialists in diseases of the nervous system keep many operators busy, and, if the services of competent persons could be secured at moderate fees, would keep many more busy. How much oftener would massage be prescribed if the physician felt

that his patient could afford it, and how many of our nervous patients might recover more rapidly if it were possible for them to avail themselves of its beneficent action!

Another reason for the blind taking up this occupation is the great benefit it will be to the blind themselves. It is an acknowledged fact that physically the blind are not the equal of the seeing. This is mainly due to the lack of exercise and physical training. If, as I propose, massage is taken up as a course in the state institutions, as students they will require subjects to operate on, and where will they find patients more in need of their art than right at home? I should expect to see, as a result of this, a decided improvement in the general health of the pupils, manifested in an increase in the average weight, chest measurement, and grocery bill.

What is necessary for this proposition to be successful? The blind person who expects to take up massage for an occupation must be of sufficient physical strength. This, I believe, is largely under his own control; muscular strength depends upon muscular use, and given a determination to succeed and build up a muscular system that has been enfeebled by lack of use, the average blind person can certainly undertake the duties of a masseur with a feeling of confidence.

No blind person who is infected with specific disease should become a massage operator. Even if the disease is no longer contagious—no one, not even a physician, would care to be operated on by a syphilitic if he knew it—there is a natural feeling of repugnance, and the success of this movement must not be hazarded by an accidental infection. If such an infection were to occur, the news of it would travel—as all ill news always does—apace. Therefore, I would insist at the outset, that specific infection should be an absolute bar to instruction, at least in any state institution.

The training must be *the best*. The pupils must be thoroughly grounded in the anatomy and physiology of the human body before the practical work of massage and

Swedish movements is imparted. I should suggest a similar course to that given at the Baron Possé school. This institution turns out our best operators, and if the blind are to succeed in this line of work, nothing but the best is good enough. We have too many incompetents now. In this world, to be successful one must offer as good an article as one's competitor, so if the blind would succeed they must offer service equal to that of the seeing, and not expect to be employed simply on account of their infirmity.

The habits of the operators must be above reproach. By reason of their infirmity the blind are apt to be untidy, as they cannot see if the clothing is clean or when their linen is soiled, but much can be accomplished by training. All disagreeable and unpleasant habits must be eradicated, and a pleasing and cheerful manner cultivated. Success depends often as much upon little things as upon great ones, and an otherwise acceptable masseur will be handicapped if he neglects to keep himself and his wearing apparel scrupulously clean, or has a disagreeable manner.

That this movement may be successful, it is, above all things, necessary that it should meet with the coöperation of the medical profession, and this is my excuse for presenting this subject, though not a strictly medical one, before this association. Massage, with all its attendant benefits, is at present limited to the few who can afford to pay the somewhat high fees demanded, but what is good for the banker or banker's wife is just as necessary for the book-keeper and his wife, and if the profession can obtain as good and efficient service at a moderate cost, it is certain that massage, with all its tremendous therapeutic value, will be employed more and more. There is no reason why a blind person should not become just as expert and efficient as a seeing one, and some reasons why they should be more acceptable. If, in the course of the next few years, blind massage operators apply to any member of this association for employment, I trust that at least they may be given an opportunity to show whether or not they are capable.

A DIFFERENTIAL SYMPTOM OF PELVIC CELLULITIS.

By ELY VAN DE WARKER, M. D., of Onondaga County.

October 13, 1897.

Many of the difficulties attending the differentiation of pelvic cellulitis from pelvic peritonitis and other intra-pelvic inflammatory conditions and neoplasms disappear when the symptoms of cellulitis are carefully analysed. In this short paper I shall describe but one of many that has this differential value, for the reason that the symptom is of itself an absolute indication of an invasion of pelvic cellular spaces, but also its careful study and analysis is a happy demonstration of the continuity of the cellular areas of the different pelvic planes. Of its clinical value I can state positively. To the pelvic surgeon, it is, when present, of special value, as by it he is able to recognise the presence of cellular inflammation, and deal with a complication that, undetected, would render the most careful operation of no avail.

This is an extension downward of a well-defined mass of cellular infiltration into the lateral vaginal wall and continuous with the lateral vault of the vagina. From this lateral mass a spur sometimes extends transversely behind the cervix, but below the cul de sac, and free from the utero-vaginal junction. This is an objective symptom, offering palpable verification by bi-digital exploration through the rectum and vagina, and may be caught up between the index finger in the rectum and the thumb in the vagina. Examined through the speculum, the surface is smooth and shining and the rugae obliterated. This is pelvic cellulitis *per se*, a veritable extension from cellular infiltration of the broad ligament and an indication of its presence that has

never deceived me. This sign was figured and briefly described by me in the "Transactions of the American Gynaecological Society for 1895" in a paper preliminary to this more elaborate study of the symptom.

I hope to be able to show that this condition is the result of the extension of the cellular exudate from the broad ligament through the communicating cellular channels directly into the lateral wall of the passage, and thence into the recto-vaginal septum, by some rather tedious anatomical details. Briefly, it depends upon the peculiar relations of the broad ligaments to the iliac fascia, and which is continuous below with the lateral pelvic fascia. The best description of this is the old one by Jarjary, and quoted by Bernutz and Goupil. In dissecting the broad ligament from its lowest part at its blend with the tissues of the vaginal vault, two portions unfold, separating into muscular and serous layers and an aponeurosis. At its upper part this separation is arrested by a thin aponeurosis, separating the tubo-ovarian apparatus and the round ligament. By lifting the peritoneal layer at the upper border of the broad ligament, which is not difficult except at the part of the ovary and Fallopian tube, we find a thin aponeurosis, resembling that at its lowest part. At the outer side of the Fallopian tube these two layers unite, separated only by small vessels surrounding the round ligament, and blend with the anterior aponeurosis of the broad ligament; behind they unite with the posterior aponeurosis. Laterally they are defined by the superior angle of the uterus, its anterior border, and externally become one with the iliac fascia. We see from this description why the characteristic vaginal extension of the broad ligament exudate takes a never varying direction. It is never found in the recto-vaginal wall, coming from the direction of the utero-vaginal commissure, but always as a spur from the lateral vaginal wall, as from this direction only is it continuous with the broad ligament cellular spaces, closed in, as this channel is, by the ligamentous aponeurosis and the iliac fascia.

Bernutz, commenting on this, says that it "enables us to understand how abscesses of the broad ligament, developed in its cellular tissue, are situated below this aponeurosis, below the Fallopian tube, and in front of the ovary; while, on the contrary, the purulent collections found in the cases of pelvic peritonitis which we are considering, are intra-peritoneal lesions, connected generally with affections of the tube and ovary, and situate behind and external to the layer of aponeurosis. Hence it results that the progress of the inflammation of the cellular tissue must necessarily tend toward the abdominal wall or else to the deep iliac fossa."

The extent of this intra-ligamentous space, enclosed by its aponeurosis, is well displayed at its lowest part in pan-hysterectomy by the supra-pubic route in the Trendelenburg position, by which the folds gravitate apart and display the vessels and lymphatics, and the cellular space laterally to the pelvic wall and below into the connective tissue of the lateral vaginal wall.

Savage also gives an exact description of intra-pelvic cellular spaces, which goes far to explain the implication of the vaginal wall. In his description we may trace the inflammation of the broad ligament, extending to the iliac fossa laterally and downward through connective tissue spaces into the vaginal wall, and through the sacro-pubic areolar process, also to the lateral surface of the vagina. Thus we see there is a direct communication between the spaces of the broad ligament and the iliac fossa to the lateral vaginal wall, guided by the aponeurosis of the ligament and the fascia of the pelvis.

This also demonstrates that pelvic-peritonitis and pelvic cellulitis are well defined anatomically with good and substantial structural reasons, that the vaginal cellulitis belongs to the latter and never to the former, and why the two diseases should so widely vary in their clinical history, with a formidable array of differential symptoms whether they exist separately or side by side.

The tactile demonstration of the cellulitis of the vaginal

wall is a very simple matter. A vaginal examination reveals the exudate in the wall of the passage. Its further exploration is made by inserting the thumb into the vagina and the index finger of the same hand into the rectum. The mass can then be palpated between the thumb and finger. In case there is an extension of the exudate into the recto-vaginal septum it can be thus traced from the side of the passage. I have never seen it as shown in Fig. 1, except as so developed, and as already explained.



FIG. 1.—Showing the thumb in the vagina and the index finger in the rectum and the exudate in the recto-vaginal septum caught between.

The palpation of the broad ligament is always more effectively made through the rectum. It is usually a painful proceeding, and is practised more effectually under an anaesthetic. Under this condition the extreme lithotomy position gives a more extended reach to the exploring finger and places the abdomen better under the control of the palpating hand. When the presence of pus is suspected, great care must be used and gentleness, as thin-walled sacks have been ruptured and the contents diffused through the peri-

tonaeal cavity with fatal results. By this manipulation the infiltrated broad ligament can be traced directly downward into the lateral wall of the vagina, and thence into the rectovaginal wall. In this position, also, the bimanual palpation is more effectual in detecting the extension of pelvic peritonitis, as well as differentiating a distended tube and intraperitoneal accumulation from the exudate in the broad ligament.

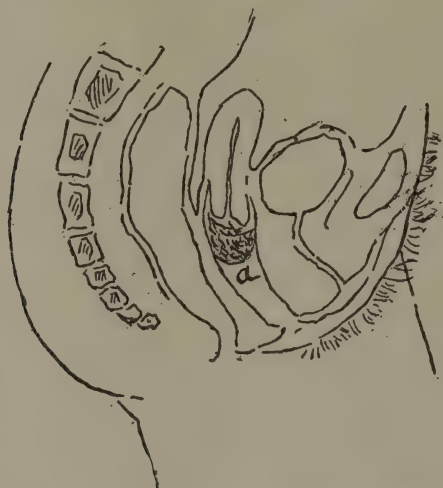


FIG. 2.—A schematic showing of the usual situation and extent of the cellulitis of the lateral vaginal wall at *a*.

THE CONSERVATIVE SURGICAL TREATMENT OF UTERINE FIBROIDS.

By E. E. MONTGOMERY, M. D., of Philadelphia, Pa.

October 13, 1897.

Hysterectomy, vaginal or abdominal, may justly be considered conservative when performed for conditions which must otherwise imperil life or health, but in this paper we propose to use the term in a higher sense—the conservation of function in organs which are crippled unless treated, and have until recently been regarded as conditions justifying their sacrifice.

I would not presume to justify the retention of a uterus containing fibroid growths when the condition is still farther complicated by serious ovarian or tubal disease. There are, however, many cases with extensive fibroid formations, in which, by the exercise of care, the growths can be removed, leaving a severely lacerated organ, which with proper management may be restored to a functionating organ capable of affording hope for, if not actual, future progeny.

The growths may be attacked either through the vagina or by way of the abdomen.

The truly conservative procedures per vaginam are:

1. Dilatation and curettement of the uterine canal.
2. Splitting of the cervix.
3. Incision of the tumor capsule.
4. Removal of the tumor after twisting, or cutting, its pedicle.
5. Arrest of blood supply by ligation of vessels.
6. Enucleation.
7. Morcellation.

The first three procedures, unless a part of a general plan, are merely palliative. Dilatation of the cervix by laminaria

tents affords an opportunity for digital exploration of the cavity and the determination of the size, situation, and relation of intramural and interstitial growths. By decreasing the resistance of the cervix, it promotes the more rapid extrusion of the tumor. The same effect, to a more marked degree, is accomplished by splitting the cervix. The latter, however, is not applicable for a tentative procedure, unless the growth is already making pressure upon, and has partially taken up, the uterine neck.

The influence of *curettement* is confined to its palliative effect in the arrest of haemorrhage. For this purpose it is especially valuable, and produces such changes in the diseased uterine mucosa that haemorrhage may be kept in abeyance for a considerable period. It should not be employed when the tumor is a polypus, merely attached by a pedicle. Such cases should be treated by division of the pedicle, through torsion or incision, and delivery of the growth. This plan of treatment is preferable whenever the pedunculated growth can be reached after dilatation or splitting of the cervix. The growth should be seized by a strong, preferably four-pronged vulsellum, and rotated two or three times until its pedicle is torn off, when the delivery can be accomplished by traction. The latter should not be employed until it is certain the pedicle is loosened, otherwise inversion might readily be produced.

Incision of the tumor capsule, and partial enucleation of the growth, is of particular advantage in controlling haemorrhage. The divided vessels retract and become occluded by clots.

It facilitates the extrusion and conversion of interstitial or mural growths into the intramural. The resistance of the tissue intervening between the growth and the uterine cavity is withdrawn, and in some cases the extrusion is rapid.

It is not absolutely free from danger; the premature removal of resistance may cause so rapid extrusion that the blood supply is arrested and it becomes a sloughing fibroid, greatly increasing the danger to the patient.

Cutting off the blood supply by ligation of the uterine arteries was advocated by Dorset of St. Louis, in 1890; by Gottschalk, in a paper before the Brussels congress, September 16, 1892; but was first performed by F. H. Martin of Chicago, November 15, 1892. As done by Martin, it is not only a ligation of the uterine arteries, but the whole base of the broad ligament is secured in order to occlude not only the main channel of the uterine artery, but its collateral branches. In very vascular growths, he also burrows up and secures the ovarian artery upon one side. Naturally, the best criterion of the value of any procedure is determined by practical experience. In thirteen cases reported by Martin, upon whom the operation had been done more than a year, the tumor entirely disappeared in several; in others it decreased in size, while in three the haemorrhage was but slightly improved.

The advantages of the procedure are that it can be done without opening the peritoneal cavity and thus subjecting the patient to a dangerous operation.

The absence of an external incision and the slight peril of the operation render it more acceptable to the patient.

Among its disadvantages are: the possibility of ligating or injuring the ureter; the difficulty sometimes experienced in reaching the uterine arteries; the possibility of securing so effective an arrest of blood supply that the tumor, incompletely nourished, undergoes caries or necrosis, when the danger is greatly enhanced.

The complete absorption of a mature fibroid, or one which encroaches largely upon the uterine cavity, must be doubtful. The retention of a portion of such a growth must be a menace should the patient become pregnant, as it may be a source of dystocia and the increased nutrition lead to its redevelopment. The influence of the reduced supply of blood to the uterus upon the subsequent possibility of conception and ability of the organ to nourish the product to full term is worthy of consideration.

Enucleation of growths which have been pushed into the

uterus, forming sessile tumors, when the uterine canal has been partially or completely dilated, has long been practised. When the tumors were of considerable size, it has been supplemented by removal, *piecemeal* or *morcellation*.

What I wish to particularly assert in this paper is, that by a combination of these methods, we may succeed in removing growths, and leave a functioning uterus in cases where it has been formerly deemed necessary to sacrifice the organ.

Sessile, and particularly interstitial, growths situated in the body of the uterus, with a long, undilated cervix, have been regarded as either requiring long-continued medical treatment, or the sacrifice of the body of the uterus. The former means months, or even years, of invalidism before the tumor can be so extruded as to render it readily accessible; the latter, the sacrifice of the fondest hopes and the highest aspirations of a woman's life. If such a growth is found in a woman near the climacteric, without treatment, that plan of treatment should be employed which affords relief with the least discomfort and danger; but in a young woman, the retention of function justifies greater risk. The procedure I would suggest is a combination of the various procedures already discussed.

1. Efficient dilatation of the uterus, to at least permit the exploration of its entire cavity with the finger. This dilatation may be accomplished with the repeated use of laminaria tents, or Vulliet's method with gauze packing. With either procedure, the vagina should be rendered as near sterile as possible. This is best accomplished by exposing the cervix with retractors, and cleansing the vagina and cervix by repeated swabbing with a formaline solution (1 to 1,000); hollow laminaria tents which have been soaked in a saturated solution of iodoform in ether are introduced, using a large tent, or a number of small ones. They are kept in place by a tampon of iodoform gauze. The tents may remain from twelve to twenty-four hours. Unless the cervical canal is very narrow, the dilatation secured by one set of tents will

be sufficient for the purpose of the investigation. If it cannot be satisfactorily accomplished, the canal should again be filled with tents, previously taking the precaution to cleanse the vagina and irrigate the uterus with the formaline solution. If the operator is unprepared to proceed to removal of the mass, the dilatation may be retained by packing the uterus firmly with iodoform gauze.

The next procedure will depend upon the size, situation, and accessibility of the growth. If well within the cavity, it can be rendered more accessible by splitting the cervix up to or even beyond the internal os. The portion incised will depend upon the situation of the growth. Near the fundus, or in a lateral wall, it will probably be more readily exposed by lateral incisions. The anterior and posterior lips are each seized with a double tenaculum and drawn apart, while the lateral incisions are made with a bistoury. Care must be exercised not to injure the ureters, which will probably be caused to approach the cervix by the wide eversion of the lips. The incisions do not enter the peritoneal cavity, but permit the uterus to be drawn into the everted broad ligaments, as the incision may be carried into the lateral fornices, always keeping in mind the proximity of the ureters. Bleeding from the circular artery, or other branches of the uterine artery, is temporarily controlled by haemostatic forceps.

In sessile or mural growths of the anterior or posterior wall, not unfrequently the tumor may be more readily exposed through an anterior incision. The dissection of the bladder from the uterus will permit of an extensive exposure. Having made the incision, the margins of the wound should be retracted by sutures of heavy silk, as less likely to injure the walls than the double tenacula. Upon exposure, the capsule of the tumor should be incised.

In mural growths, this incision may bifurcate laterally, permitting the overlying uterine tissue to be dissected in two flaps. A firm grasp of the exposed tumor is made, and it is drawn upon while the tissues are pushed off with a

blunt dissector, so curved at its end that it will closely hug the surface of the tumor. Such an instrument is preferable to the finger for dissection, as it occupies less space, will do less injury, and is not so likely to carry infection. If the tumor is too large to permit of its complete enucleation, it can be reduced by morcellation. As enucleation progresses, it may be facilitated by rotation of the tumor, thus twisting it out of its bed. After the removal of the tumor, the parts should be thoroughly irrigated, the torn mucous membrane adjusted, and the cavity packed with a long strip of iodoform gauze, the end of which projects from the cervix. The incised surfaces are accurately brought together with sutures, exercising care that the sutures do not include the protruding gauze. After closure of the incision in front of the uterus, the peritoneal and vaginal surfaces should be sutured to it, placing a gauze drain through the latter.

If the lateral fornices of the vagina have been opened and the cellular tissue much disturbed, a gauze drain should be inserted on each side. The gauze drains should be removed between the third and fifth days, according to the patient's progress. For the ready accomplishment of this operation through the vagina, the uterus must be movable, the tumor not larger than the fist, and the vagina moderately dilated or dilatable.

Where the conditions are unfavourable the growth must be attacked through an abdominal incision.

The conservative abdominal procedures are :

1. Ligation of ovarian arteries.
2. Myomectomy.
3. Enucleation.

The arrest of blood supply by ligation of the ovarian arteries, and anastomosis of ovarian and uterine arteries, as advocated by Robinson, has been demonstrated as capable of reducing the size of fibroid growths, but is open to some of the objections brought against vaginal ligation. A serious operation has been performed, which is not certain to produce a favourable result. The tumor remains to undergo

degenerative processes, or take on new life and development.

Myomectomy has long been recognised as a proper procedure in the treatment of pedunculated extramural growths.

Enucleation of fibroid growths through the peritoneum has been exceptionally practised. Kelly recently read a paper advocating it, before the American Medical Association. Chevrier, in 1892, reported 125 cases thus treated, with a mortality of 16 per cent. He cautions against opening the uterine cavity. Is there any reason why the operator should fear to follow it if necessary, even into the uterine cavity? The wound in the remaining portion of the uterus can be readily sutured, and with just as reasonable hope of success as in the suture of the incision of a Caesarean section.

In young women, then, we would advocate the enucleation of fibroid growths, even when so large as to require the abdomen to be opened, whenever the condition of the ovaries and tubes presents no barrier to the hope for complete restoration of the functions of the pelvic organs. The capsule of the tumor should be incised, and the enucleation accomplished with the use of the metal dissector; bleeding vessels should be secured with haemostats, and where the uterus is occupied by a number of growths, the cavity should be temporarily packed with gauze, held in place by a suture, otherwise, it may become lost in the abdomen, and be overlooked. Mural, or even intramural, tumors should not be considered as contra-indicating this method of procedure. In such cases, however, it may be a question as to the wisdom of drainage, by gauze, through the vagina. Such practice would necessitate previous sterilisation of the vagina. After the enucleation of the growths, the cavity should be carefully dried, where the uterine cavity has been entered, the mucous surfaces adjusted, and the walls apposed, using for this purpose sterilised catgut. The entire procedure must have been done with the most careful aseptic precautions. No more favourable field for infection can be presented, nor one more direful in its results.

My first case of enucleation, through the abdomen, was performed in 1892, in the clinic of the Jefferson hospital, and the results in that case and in others in which I have subsequently practised it, have been uniformly satisfactory.

DISCUSSION.

DR. FREDERICK HOLME WIGGIN presented a large fibroma, which he had removed from a patient at the city hospital. He said the woman was forty-two years old, had never been pregnant, and had noticed over a year before a gradual enlargement of the abdomen. She suffered intense pain, and she and her husband insisted upon an operation, although he thought the woman's vitality was so low she could not survive. It was necessary, on account of the weakness of the patient, to perform the operation through the abdomen. The abdomen was opened, the uterus incised, and the tumor removed, with the greatest rapidity possible, the entire operation requiring but very few minutes. The uterus was sewed up and drainage was provided; the woman recovered, and has not suffered since.

DR. DUDLEY said that in this connection he wished to mention a case of a virgin girl, who came to him at the Post Graduate, suffering from a large tumor. He found it necessary, in this case, to open the abdomen, open the uterus, and remove the tumor. The question arose as to the means of drainage. He placed a piece of gauze through the uterine wound, drew one end of it down through the vagina, and the other out through the abdominal opening. He thus had drainage in both directions. When he wished to remove the gauze, he drew the portion through the abdominal opening up a little, and cut it off, then drew the other part out through the vagina. The patient recovered, and has not been troubled since.

DR. E. D. FERGUSON said he considered the question of myomectomy an important one. Fibroma were seldom single, but usually there were several, as could be seen in the one presented by Dr. Wiggin. It was not only the question of removing the fibroma, therefore, but whether there would not remain seed, as it were, to give trouble in the future. It was then a question as to what conservative surgery in these cases was. It might prove more conservative for the patient if the uterus were removed. In cases nearing the climacteric, he thought it best to perform hys-

terectomy, but in the case of young women, it might be proper to save the uterus, if possible. It was a question, however, if myomectomy was not becoming a fad, and would not, in many cases, prove less conservative for the patient than hysterectomy.

DR. J. E. JANVRIN said that Dr. Montgomery's paper had presented facts from an old field in a new and interesting way. For years tumors had been removed from the uterus, though in some cases it had been done in a crude way. He congratulated the doctor on his success. He thought that where there were tumors to remove, and the appendages were affected, the uterus had better be removed, but when the tubes and ovaries were in a healthy condition, and the woman young, the uterus should not be taken away.

DR. WIGGIN said that in women under the age of forty, he left the uterus, unless it was so diseased that it had to be removed. He thought it best to save to the woman the function of procreation.

SOME REMARKS UPON CONSERVATIVE SURGERY OF THE UTERINE APPENDAGES.

By A. PALMER DUDLEY, M. D., of New York County.

October 13, 1897.

My object in choosing this subject of "Conservative Surgery upon the Uterine Appendages," for a short paper, for this meeting, is two-fold: First, to answer some criticisms that have lately been made upon my work in this direction; secondly, because for years I have been deeply interested in the work of attempting to save portions of these organs, and restore them to proper usefulness, and I desire that the members of this Association should know the results of my work.

If we hastily review the history of what is commonly called "Modern Gynaecology," dating from the early work of Sims to the present time, I think we shall be able to aptly apply the recommendations set forth in the address of Mr. Sinclair (president of the obstetrical section of the British medical meeting held in Canada this year), with respect to the reforms becoming necessary in modern obstetrics, they are so justly applicable to our own specialty. I mean to say that, judging from my own experience, the pendulum has swung too far, and, with the aid of our modern, antiseptic methods, men in our specialty have in the past removed many organs unjustifiably. The discussion before the British Medical Association, this year, made it sufficiently clear to all that the operation of hysterectomy for pelvic diseases has become nearly perfect, and it also developed the fact that the operation was, to a certain extent, stimulated by fashion. The French surgeons, particularly, have become so expert in doing the operation, that, ere long, they will innocently become a large factor in the decrease of the population, by

diminishing possible chances of child-bearing. In order to confine myself strictly to the title of the paper, let me do so by asking a question, and, as far as I am able, give my answer.

To what extent can we do conservative surgery upon the uterine appendages with safety to the patient?

In my attempt to answer such a question, I will simply give you the results of my own experience. Having, long years ago, seen the removal of what I considered healthy and fat ovaries, so far as the eye could tell, for the relief of apparently trivial pelvic disease, and the patient recover; also, various forms of surgery upon the uterus itself with the same good results, I determined, if possible, should a case present, to test the recuperative power of the ovary. On October 18, 1887, I did my first operation of this kind; it was upon a single woman, who had been under my care for months, suffering from retro-displacement, complicated by pelvic adhesions about uterus, tubes, and ovaries. I performed laparotomy—found both tubes and ovaries buried in plastic exudations, and a pyosalpinx on the left side. I was obliged to dig the appendages out of a bed of surrounding adhesions. I removed the left appendage, and although the right tube was twice the normal size, and the ovary full of cysts, some of them as large as a filbert, I returned the appendage, after treating the cysts in the ovary in a manner yet to be described, and then closed the abdomen, knowing full well that I was experimenting with the case. The woman made an uninterrupted recovery, and afterwards married and became a mother. I have already reported her case in full in a previous article.

My second case begged that her ovaries might not be sacrificed. I gave her my promise, and did the work, removing a portion of the ovary, and bringing the remainder together with fine silk suture. This patient made an uninterrupted recovery, and a few months later became pregnant. Fearing the pregnancy would undo what I had done for her, in spite of my advice to the contrary, she induced an abortion upon herself by injecting hot water into the uterus.

Such cases as I am speaking of are not of every-day occurrence, and it was some time before I secured another case. Time will not allow me to give you a description of the many cases I have had since. Suffice it to say, that, up to the present time, I have records of eighty-eight cases where I have removed portions of tubes and ovaries, and returned the remaining portion of the appendages to the pelvis.

I have not been able to trace them all in their after history, but I have secured the record of fourteen cases where a pregnancy has followed; and of these fourteen, eight have borne children, four have aborted, from one cause or another, and two are still pregnant. In the whole eighty-eight cases, I have never seen inflammation follow in the appendage that could be detected by careful bi-manual touch, except in one case, which was of gonorrhoeal origin. In many of these cases, I have cut the ovary completely in two, longitudinally, removed cysts from its centre, and sewed it up again. I have never treated the ovary with the cautery, as described and recommended by Pozzi, because I think it is an unnecessarily harsh treatment in cystic degeneration of the ovary, and that just as good results can be obtained by puncturing the cysts with a needle, scratching the cyst sac sufficiently to cause it to fill with fresh blood, and the latter becoming organised, will obliterate the sac. I also believe it impossible for the operator to tell just how far beyond the cyst sac the healthy ovarian structures are destroyed by the action of the heat.

In doing any form of ovarian surgery, if we intend to save any of the organ, we should save all we possibly can. I have cross-sectioned it, and sewed it together; I have taken V-shaped pieces out of it and closed the remainder, and for cystic degeneration, I have punctured it through and through, in many cases, many times; I have even removed almost the entire ovary, leaving a portion, possibly not larger than a pea, and fastened that to the extremity of the tube.

I will say, that, in all this work, I have never used animal suture of any kind, but always the finest embroidery silk, sterilised, and applied with a cambric needle. I have cur-

etted the surface of the ovary with a sharp curette, and touched it with pure carbolic acid. I have removed pus from the ovary, and left the remaining, apparently healthy, portion; and, as I previously said, have seen but the one case of inflammation follow, that I could make out by bi-manual exploration.

In the treatment of the Fallopian tube, I can also say that I have treated it in a conservative manner for many forms of disease. I have opened up an occluded tube in many cases, but when doing so, I always treated it in the following manner:

I make a phymosis operation on the remaining healthy portion, by slitting it up a half inch or more on the upper surface, rolling out the cut surfaces, as we would the prepuce, and then with fine silk and running suture stitched the mucous lining of the tube to its peritoneal covering, all about; in this way preventing re-occlusion of the tube, and allowing the ciliated epithelium to act in place of the fimbrae which have been removed. In these cases, I invariably fasten the remaining portion of the ovary to the tip of the remaining portion of the tube by fine silk suture. In none of the cases, so far, that I have selected for this kind of work, have I had cause to regret it.

I have even gone further than this. I have operated upon tubes distended with pus, washed out the latter with an aseptic solution, after having passed a fine probe through the tube into the uterus, and re-opened the tubo-uterine stricture, and had my patients recover without the first signs of peritonitis. I qualify this statement with the one that I never treat a tube thus affected in such a manner, if there be any odour to the pus, showing internal gonorrhoeal or septic infection.

I have on my records several cases of pyosalpinx, treated in such a manner, whose after history I have carefully followed up to the present time, and as yet they have had no recurrence of inflammation, and have menstruated regularly every month without trouble.

My reasons for having devoted myself to such work are:

1. That I believe that no surgeon can anticipate just what effect an early induction of the menopause by ovariectomy will have upon a woman's nervous system. Some it will affect in one way, some in another; some will put on flesh, some will lose it; some will be cheerful and contented, others will be melancholy. In many cases, the domestic relations are destroyed by the knowledge of the husband or wife that she is not a perfect woman, and that what every woman should have preserved, if possible, she has been deprived of.

They all suffer more or less from hot flashes, and in many cases the latter become a very troublesome condition, the heart palpitation and hot flash creating a constant fear of future evil. Many times in the past I have had my patients return to me, and complain that these nervous symptoms were dreaded much more than the condition for which I did the operation, while expressing a regret that they had ever undergone the same.

Another reason for my work is a belief that pelvic surgery should not be compassed about by the opinion, even of a majority of the profession, that hysterectomy is the last resort, in order to effect a cure. We must progress, if possible, for the design of surgery, from the beginning, was to save, and not to mutilate, the human body. This should be constantly borne in mind by every fair-minded surgeon, and I predict that if any advance is made during the next ten years, it will be along this line of "Conservative Surgery upon the Appendages."

THE NEW EPOCH IN THE STUDY OF NEURAL PATHOLOGY.

By IRA VAN GIESON, M. D., of New York County.

October 13, 1897.

It may seem a little sententious to speak of "the new epoch." I might more appropriately say that we speak of old subjects in new terms.

There are four cardinal factors which make a new view of the pathological phenomena of the nervous system. These make an opening pathway to the understanding of pathological conditions, for it has been shown that the nerve fibre and the nerve cell are anatomically and physiologically united. It has been the tendency to consider the white and the gray matter as separate and distinct, but now the acceptance that the nerve fibre is but the continuation of the cell, makes the first factor which aids the further understanding of pathological conditions.

The second factor is the linking of pathological anatomy, physiological chemistry, and bacteriology. Physiological chemistry is important in this relation.

The third factor is the great advancement of the modern science of cells, embracing the consideration of the significance of the cell structure, with the granules and elements of which it is composed. Through this science of cytology, which is being followed and advanced by biologists, a cell is not considered as a mass, but as an organised body, having a structure of its own as much as any organ of the body.

While it may seem elementary, the fourth factor is the comparison of the nervous system with the other organs of the body; the pathological conditions produced in the liver and kidneys by toxines being similar to those produced in the nervous system.

We may flatter ourselves that we know much about the physical basis which underlies disease of the nervous system, but we are in error. To say that locomotor ataxia is the result of degeneration of the posterior columns is not enough, for there is a prior condition. The degeneration is but secondary. We are acquainted with what may be seen of the nervous system with the eye, or with a low power of the microscope, but no more, for the custom of hardening the nerves in Müller's fluid destroys all but the mere shell of the cells. The appearance of the internal structure is entirely altered. Biologists find it necessary to study the structure of the cells in the lower animals, the inter-vertebrates being of special value in this research.

In studying the pathology of the nervous system, I think it is beneficial to compare it with the pathological conditions found in simpler organs, as the liver and kidneys. Pathological conditions are very complicated and numerous, but I think that they can be comprised in three forms, *i. e.*, degeneration, inflammation, and necrosis. Instead of each division having a separate and distinct pathological lesion, it seems to me that one of these processes is acting in each lesion, but with varying intensity. Degeneration, inflammation, and necrosis are found in the nervous system, and, while the results may be modified, they are homologous to the same processes in other organs of the body, as, for instance, in the kidneys.

In answer to the question, What is disease? we may say that it is the chemical reaction between the toxic forces on one hand, and the body forces on the other. Let x represent the toxic forces, and y the body forces; then the disease would be the ratio between x and y . It will be seen that the disease varies with the proportion between the toxic and body forces. In the discussion of this subject, it should be remembered that the word toxine is not limited solely to the metabolic products of bacteria, but embraces any agent or existing condition which interferes with the normal function of the body forces. It is not necessary to enumerate the

conditions which influence the amount of toxic force, such as length of action, mixed infection, etc., for these are well known. In like manner, elements influence the amount of body force, such as age, sex, heredity, etc.

The pathological changes produced in the cell structure vary in intensity with the increase or diminution of the toxic, and the resistive power of the body, force. In order to represent the variation in the toxic and body forces, we may write $dx:dy$, in which d represents differentially the varying force. The results of the variation of the toxic and body forces may be compared to the changing of the relative position of a few pieces of glass in the kaleidoscope.

The structure of the brain may be compared to that of the kidney. The kidney is composed of a parenchyma and stroma. The parenchyma is composed of cells, which may be compared to nerve cells; the stroma to the neuroglia. When there is a disturbance in the kidney,—a lack of blood supply, too much blood, presence of any toxins,—we see the result in what we call cloudy swelling. The cells are affected, become cloudy, break down, and are destroyed, the result varying with the amount of toxine, and the length of time it acts. The brain does not escape this similar result, and hence follows the delirium of fevers, etc., cloudy swelling, if you please, of the brain cells. This swelling is not seen, upon examination, because of the use of Müller's fluid.

In nerve cells there are numerous mitomes, which cross each other at various points. At these intersections are minute bodies called microsomes. These are acted upon by toxins, begin to break down, and, if the process continues, the result is cloudy swelling of the cell, and finally its destruction. This cloudy swelling explains delirium, which, when occurring by itself, is called insanity. As we conclude in the case of the kidney what the prognosis is to be, so with the brain. The one is the homologue of the other. The prognosis is affected by the body force. Thus insolation occurring in alcoholics is of doubtful prognosis, on account of the body force and the condition of the cellular structure.

There is a point, beyond which there is no recovery in diseases where the cell structure is affected, where the cells become broken down. It is termed cytolysis, or cell destruction. Up to this point there is a possibility of recovery when the poison is removed,—cytolysis, or cell resolution. When the poison ceases to act, the cells begin to restore their normal condition, cytothesis.

There is more hope of restitution in a case of acute infection than in chronic. A small amount of poison, acting for a long time, would make repair less hopeful than the action of the acute attack. Thus, syphilis produces, in its insidious way, more damage to the cells than the acute fever, and makes cytothesis less likely to take place.

On the ground of cytothesis, it is easy to understand the existence of locomotor ataxia. The nerve cell undergoes degeneration by the action of insidious poison. This results in the death of the fibre, and, finally, by inflammatory restitution; its place is taken by tissue, and a permanent lesion ensues. Seeming improvement can be explained by the fact that some of the cells had not gone on to cytolysis, and when the poison is, for a time, less virulent, they begin cytothesis.

GENERAL CONSIDERATION REGARDING AUTO-INTOXICATION.

By H. A. HAUBOLD, M. D., of New York County.

October 14, 1897.

The theory of autointoxication has found but little acceptance on the part of the mass of the medical profession. Whilst this fact is susceptible of many explanations, the one offered by Albu of Berlin is, perhaps, the most reasonable; that is, "that the general practitioner is but little versed in chemistry, or, more specifically, in physiological chemistry, a knowledge of which is quite necessary to an understanding of the subject." In the light of recent investigations regarding the poisons developed spontaneously in the body as the result of the processes grouped under the general head of metabolism, this subject becomes one of considerable importance. Indeed, Albu ventures the prophecy that ultimately the science of medicine will owe as much to physiological chemistry as it now does to bacteriology. Certain it is that no conception of the mode in which poisons act, be they introduced into the body or developed within it, is possible unless this conception evolve itself from the lines laid down by physiological chemistry.

The development of the science of bacteriology has led to the belief that infection of itself constitutes only a portion of the aetiological factors that are concerned in the production of disease. A not unimportant part is the result of intoxication. In the majority of instances intoxication is secondary to infection, the intoxicants being the products of infection, but we are also justified in the conclusion that primary intoxication is of itself a frequent cause of diseased conditions, and that poisons may develop in the body. This

is illustrated by the poisons developed in the saliva of poisonous snakes, animals affected with rabies, in tetanus, etc., when the harmful material exists as an albuminoid. Facts which are easy to conceive justify the belief that the products of metabolism are capable of standing in a causative relation to diseased conditions just as readily as do bacteriological organisms.

It must be admitted that the facts in possession of the scientists tending to substantiate positively the theory of autointoxication are as yet small in number. Still, these facts, few as they are, are sufficiently well established to constitute a firm basis for the extension of observations and experimentation. Autointoxication means self poisoning. It consists of a poisoning of the organism with the products of metabolism, which exist normally, but here are present in excessive amount; this latter class again being subdivided into those that undergo further modification, and those that exist in the body only in minute quantity.

It is not difficult to conceive the possibility of the accumulation of autointoxicants in the body when it is borne in mind what physiological changes nutritive constituents undergo from the time of their introduction into the mouth until they are consumed and thrown off as excrementitious substances. In the gastro-intestinal canal they undergo certain changes that render them assimilable. They are taken up by the blood and lymph; undergo various other chemico-physiological changes, such as oxidation and splitting up of their elements, which unite again in different proportions until they no longer bear any resemblance to their original form. The end products of dissimulation are most of them simple compounds, such as water, the inorganic salts, urea, and the urinary salts; but the intermediate products of metabolism are far more complicated, and exceedingly difficult of observation. These possess great interest because of the belief that when they accumulate in the body they stand in a causative relation to disease. These intermediary products are not normally excreted to an appreciable extent, but

under pathological conditions, when the further physiological conversion into end-products is disturbed in a given organ or tissue, they accumulate in the blood and act as autointoxicants.

Gautier has called these intermediate substances leucomains, and believes them to be the cause of a large number of pathological conditions.

Poehl offers a concise conception of the process: "In the course of tissue oxidation there occurs an accumulation of incompletely oxidised products of the retrograde metamorphosis of the albuminoids, which result in autointoxication."

In the light of more recent observations, this is to be supplemented by the statement that disturbances of metabolism resulting in autointoxication are not limited to the albuminoids, but that grave disturbances are also the result of the accumulation of intermediary products of the fats and carbohydrates. But, further than this, it is held that in the long chain of physiological changes which the nutritive constituents of the body undergo in their function of maintaining so-called life, there are produced always not only useful substances, but also a certain amount of poisonous ones. Normally, the latter exist only in small quantity, and are quickly eliminated or undergo further changes which render them inert. In the event of a disturbance of the normal conditions, just alluded to, these poisonous substances accumulate in the body and autointoxication takes place. The toxicants circulate in the blood, alter its character, and thus act as irritants upon the various organs. If this irritation is transitory, acute autointoxication occurs; if the disturbance be frequently repeated, chronic autointoxication is the result.

The most enthusiastic exponent of the theory of autointoxication, von Jaksch, of Prag, has attempted to differentiate the intoxicants developed *de novo* in the body from those poisonous substances introduced from without by designating the former by the name of endogenous intoxicants, and classified them in the following manner:

1. Retention-toxines, developed as the result of normal

tissue consumption and accumulated in the body as the result of obstruction, or more or less complete destruction, of the avenues of excretion.

2. Noso-toxines, which are developed in the body as the result of pathological processes which change the character of metabolism so that noxious, in place of harmless, products are the result.

This group is again subdivided into:

(a) Those that occur in the body as the result of spontaneous alteration of nutritive substances (abnormal changes that the fats, carbo-hydrates, and albuminoids undergo) and developed diseased conditions.

(b) Those diseases that are the result of modifications produced by bacteria.

3. Autointoxicants that occur as the result of the presence of an abnormally large quantity of poisons which normally exist in the body to a slight extent, or poisons that are the result of modifications in the character of normal products that render them noxious.

Albu takes, apparently, reasonable exception to this classification, on the ground that von Jaksch's subdivision of auto-intoxicants into nosotoxicants, and, again, autointoxicants is unnecessary, because the substances referred to as auto-intoxicants *par excellence* are already included in the class designated under the term nosointoxicants.

A clearly defined classification of these newly-born poisons is, as can readily be seen, attended with considerable difficulty, chiefly for the reason that the processes believed to stand in a causative relation to their existence are as yet but little understood. Von Jaksch, Kobert, and Schwalbe, as well as Bouchard, include under the head of autointoxicants all the diseases that are the result of a contagium vivum, *i. e.*, the infectious diseases. Whilst it is true that the evidence at our disposal to-day points to the justification of the belief that the majority of the symptoms accompanying infectious diseases are produced by an intoxication with products of modification of the substances that are concerned

in metabolism, and that these modifications are caused by micro-organisms, these intoxications are nevertheless the result of matters introduced from without, and are generally oxygenous poisons. From this standpoint, all diseased conditions that are caused by specific organisms should be excluded from the list of those that are the result of auto-intoxication.

Still, it must be admitted that the products of fermentation and decomposition attendant upon digestion, that give rise to poisonous substances in the organism, are dependent upon the introduction of bacteria. But this distinction is permissible, that autointoxication dependent upon the bacteria of infectious diseases produces specific intoxication, whilst the other is dependent upon conditions that constantly exist in the body, and are to be considered as physiological. Indeed, it is not by any means certain just how much bacteria are concerned in the production of these physiological poisons.

It is certain that the causes that produce autointoxication in disturbances of metabolism, such as anomalies in the changes that albuminoids (gout) or carbo-hydrates (diabetes) may undergo, are to be looked for in some modification of degree of change that these substances undergo in their assimilation or change into excretions. It is this that renders the division of this subject into clearly defined classes exceedingly difficult. Still, if the conditions that obtain in the infectious diseases be excluded, something towards simplifying the subject has been accomplished.

It would seem that as far as the study of autointoxication has gone, the classification submitted by Albu is, perhaps, the one most readily made use of by medical men.

1. Autointoxication, the result of modification in the functions of organs. In this class belong those resulting from disease of glands with or without structural changes; of the latter kind, simple atrophy being by far the most frequent. Examples are,—myxoedema resulting from atrophy of the thyroid, pancreatic diabetes, acute yellow atrophy of the

liver, and Addison's disease, which latter is probably the result of structural changes in the supra-renal capsules. In brief, diseases caused by the arrest of function of those organs that are now considered to be concerned in the destruction of poisonous and noxious substances that develop in the process of metabolism.

2. Autointoxication from anomalies in the general process of metabolism without any discernible localisation. That is, diseases in which the intermediary products and the products of retrograde metamorphosis find their way into the circulation. To this class belong diabetes, and, in a general sense, gout, oxaluria, etc.

3. Autointoxication from the retention of the physiological products of metabolism in the several organs. In this class are included the phenomena coincident to the destruction of large surfaces of skin, as by burns, poisoning with CO_2 in asphyxia, uraemia, eclampsia, etc.

4. Autointoxication the result of the over-production of physiological and pathological products of the body,—hydrothionaemia, ammonaemia, acetonuria, diacetonuria, cystinuria, etc.

Between the third and fourth class, and belonging with apparently equal propriety to either of them, is the class of autointoxicants that originate in the gastro-intestinal tract as the result of acute and chronic disturbances of digestion unattended by organic changes in these organs, *i. e.*, gastric and intestinal vertigo, asthma dyspepticum, dilation of the stomach, chronic constipation, intestinal obstruction, and strangulated hernia, attended with various neuroses dependent upon irritation of the central nervous system, skin eruptions, etc.

It is only necessary to glance at the large number of varied signs and symptoms that we are now justified in ascribing to autointoxication to readily understand how impossible it is to explain them all from one standpoint. It is the office of future observer and investigator to arrange them systematically when cause and effect shall be

more correctly standardised. The more extensive our knowledge of autointoxication becomes, the more readily will it be possible to discover errors in the classification given above. At present there is a tendency to include conditions in the class called autointoxications that do not properly belong there. The tendency seems to be to denote as autointoxications those diseased conditions that hitherto it has been impossible to classify. Nevertheless, it appears reasonable that a considerable number of disturbances of nutrition and diseases of the blood, like chlorosis, pernicious anaemia, leucocythaemia, the cachexia of carcinoma, purpura morbus-maculosa, scorbutus, haemophilia, etc., will ultimately be properly included in the class of diseases the result of auto-intoxication. It is these facts that make a clearly defined classification of autointoxication well nigh impossible at the present time, and emphasise the necessity of a closer study of its phenomena.

The field of autointoxication embraces the entire domain of pathology. Although as yet chiefly important to the clinical observer and the neurologist, the surgeon and gynaecologist of the future will, no doubt, derive much aid and guidance from it. In the present state of our knowledge, it seems expedient to consolidate the subject and consider it from the following standpoints:

1. The origin or source of autointoxication.
2. The conditions that determine its development.
3. Its manifestations.

Autointoxication takes its origin from the following parts and organs of the body:

1. *The skin*.—The phenomena following severe burns of large surfaces.
2. *The lungs*.—Carbon dioxide poisoning from interference with respiration.
3. *The kidneys*.—Uraemia and eclampsia.
4. *The suprarenal capsules*.—Addison's disease.
5. *The gastro-intestinal tract*.—To this class belong the various constitutional disturbances consequent upon dis-

eases of the stomach and intestines. To this may be also added,—

(a) *The liver*.—Acute yellow atrophy, icterus-gravis, and cholaemia.

(b) *The pancreas*.—Diabetes mellitus.

6. *The thyroid gland*.—Myxoedema, cachexia, strumip-vira, and possibly Basedow's disease.

The second standpoint from which autointoxication is to be considered is the conditions which determine its development. Autointoxication occurs only under conditions that never exist in the body normally, still very little deviation from the normal is required for its development. Intoxication of the organism occurs only when secreting or excreting organs that are also the avenues by which noxious substances are thrown off are either obstructed or insufficient, or when the nature and quantity of the poisonous substances is such as to constitute itself sufficiently intense to exceed the normal variations. Organs of this nature may be stated as follows:

1. *The skin*.—Besides the elimination of gases by the skin, the excretion of sweat is to be considered. This substance contains products of dissimulation, the retention of which is productive of no slight disturbance. It is well known, that persons who have more than two thirds of the surface of the skin destroyed, or rendered impervious, die in a short time. The elimination of water through the skin, bears a ratio to the elimination of water by the kidneys; a fact so well known that even the laity make use of the skin as an avenue of elimination. The sweat not only contains water, but a number of other substances are thrown off with it, such as inorganic salts, albuminoids, urea (in uraemia and in cases of cholera asiatica in crystalline form), also, fatty acids; cholesterin, in cases of diabetes; glucose, in icterus; the colouring matter of the bile in bromidosis leucin, tyrosin, ammonia, etc. Substances used as therapeutic agents are frequently eliminated by the skin. There can be no doubt that the skin is to be considered as an important excretory organ, modifications

of its function having no slight bearing upon the condition of the general system.

2. *The lungs*.—The importance of these organs as eliminators is sufficiently recognised to preclude discussion on this point. The expired air contains a number of gases that are the products of retrograde metamorphosis. In disease, the admixture of abnormal substances can often be readily recognised by the sense of smell, such as the fruit odour of acetone, in diabetes; the sweet breath of general septic infection; the ammonia in ammonaemia, and the hydrogen sulphide in hydrothionaemia, etc.

3. By far the most important excretory organs of the body are the kidneys. These organs are capable of an immense amount of labour, and continue to perform their function, even though they be diseased throughout their greater part. As long as the epithelium is intact, they continue to separate the excrementitious substances from the blood, which are then taken up by the water from the glomeruli, and washed down the ureters into the bladder. In this manner, the body is enabled to rid itself of a large number of poisonous substances, which the kidneys remove either unchanged, or in some way modified in composition. Indeed, they seem to a certain extent capable of a poison-destroying function, inasmuch as they change the composition of poisonous substances as to render them inert. A number of chemical changes take place in the kidneys, such as oxidation, reduction, splitting up of elements, pairing, etc. Of course it is not absolutely certain how much of this takes place in the kidneys themselves, whether, for instance, the pairing of glycuronic acid and hippuric acid takes place in these organs.

The kidneys frequently react upon poisonous substances with either functional or organic disturbances of more or less severity, that manifest themselves by the presence of albumin and casts in the urine. A condition recently characterised by the term "toxic nephritis" is one which has its anatomical expression in a coagulation necrosis. This condition is frequently observed in the course of acute infec-

tious diseases, diarrhoea of infants, cholera asiatica ileus, etc., where the irritant originates from the contents of the intestine. Without doubt, it will soon become possible to show that the nephritis and albuminuria, coincident to icterus, is dependent upon the presence of the constituents of the bile in the blood. Senator attempts to show that the origin of the poison which acts so perniciously upon the kidneys, is not the general contents of the intestines, but incompletely converted albuminoids (propeptones), which form in the gastro-intestinal canal, whenever there occurs a disturbance of digestion. Still, this is a detail which is only of minor importance to the clinician.

4. *The digestive tract.*—It is well known that nutritive and other substances introduced in the mouth are, because of their insolubility, never absorbed, and are thrown off from the body in the faeces, together with an amount of excrementitious material. It is also generally known that certain substances that are introduced into the blood hypodermatically, are eliminated by way of the gastro-intestinal canal. There is no doubt that the stomach and intestine are vicarious channels of elimination, for the urea that accumulates in the blood, in cases in which the kidneys, from disease, are incapable of performing this function. If the emptying of the gastro-intestinal canal is arrested by one of the frequent disturbances these organs are subject to, such as intestinal atony, volvulus, hernia, etc., the excrementitious substances they are concerned in eliminating are retained in their lumen and re-absorbed.

5. *The liver.*—An important function, with which it is believed this organ is endowed, is its ability to separate from the blood of the portal system those toxic substances that have accumulated in the circulating fluid in its passage through the absorbing organs of the intestinal canal. The liver is to be compared to an enormous reservoir, or filter, that stands on guard between the digestive tract and the heart, in which, under normal conditions, all abnormal products of tissue metabolism are separated from the blood. If

the liver, through organic disease or functional disturbance, has this ability impaired, toxic substances gain access to the general circulation. It is this sentinel duty of the liver that is of greatest possible importance in the study of autointoxication.

There is another not unimportant factor to note in the consideration of the phenomenon of autointoxication, and this is what is called "individual disposition." Albu says: "Reviewing the large number of causes of autointoxication, notably those of intestinal origin, the conclusion obtrudes itself, that the conditions favourable to autointoxication should occur far more frequently than is actually observed in practice." It is, indeed, only infrequently met with by persons quite conversant with its manifestations. Albu further states that, among the many hundred cases of various diseases under his personal observation, of which a large number were those of acute and chronic intestinal troubles, notwithstanding the fact that his efforts were constantly directed toward the recognition of autointoxication, this condition was positively diagnosed only in a relatively small number of instances. "There is, to my mind, no doubt whatever," he goes on to state, "that autointoxication develops only on the ground of individual disposition, and that this disposition is a neuropathic one."

It would certainly appear that the complex symptomatology of autointoxication can find its only reasonable explanation in the nervous system. This would suggest that the phenomena observed are reflex in character. But this does not seem to be the case. It is known that the action of therapeutic agents frequently is modified, in different individuals, by what have been designated as idiosyncrasies, as obtains in the exhibition of iodides, mercury, antipyrin, bromides, etc. The eruptions following the administration of certain drugs occur only in some persons whom we have a right to suppose are so disposed. That neurasthenic individuals are most susceptible to acute infectious diseases, is true enough, although no scientific explanation of this fact is at our dis-

posal. Indeed, the part that the nervous system plays in autointoxication has been dwelt upon by Borgherine, who supports his premises by relating a number of cases of auto-intoxication, in persons afflicted with not only neurotic temperament, but he further states that lesions of the central nervous system favour the occurrence of this condition.

Borgherine reports a case of locomotor ataxia, in which the slightest error of diet was followed by exacerbation of symptoms; also, a case of hemiplegia, from cerebral haemorrhage, in which constipation caused clonic spasm of the affected side, headache, etc. Of course, as regards neurasthenia, the possibility that the autointoxication may stand in a causative relation to the former rather than the reverse, is to be considered. It is certain that the occurrence of neurasthenia is frequently observed as a sequel to chronic constipation, dilated stomach, etc. The relations that neurasthenia and intoxication bear to each other, are quite complex and difficult to summarise clearly and definitely. That they have important bearing *upon* each other is unquestionable.

The third general standpoint from which the subject of autointoxication is to be considered, is the manner and localisation of the effects of the toxic substance upon the organism, in other words, its symptomatology, or, as stated in the original classifications, its manifestations. It is proper to state, here, that no other subject in the entire field of pathology presents a more complex and varied number of symptoms than do the autointoxications; although a single organ is frequently at fault, the disturbances resulting are usually of so general a character that it is quite impossible to designate a series of symptoms as typical. The manifestations occur in the following organs:

1. *The skin:*

(a) In the form of alteration of colour, such as anaemia, icterus, and bronzing.

(b) Exanthematous and erythematous eruptions, urticaria, dermatitis.

2. *The muscular system.*—Polymyositis.

3. *The digestive tract.*—Anorexia, nausea, eructations, vomiting, diarrhoea, constipation, gastric and intestinal colic.

4. *The genito-urinary system.*—Albuminuria, haematuria, haemaglobinuria, bile-coloured urine, and the presence of various alkaloidal substances.

5. Most frequent of all are, perhaps, the manifestations in the central nervous system, occurring, as they do, in varying degree, from the most transient to the severest and most prolonged symptoms: Cephalalgia, vertigo, syncope, insomnia, anxiety, stupour, coma, irritability, delirium, restricted spasm and general convulsions; epileptiform seizures; paralysis, and not infrequently, hypochondria, melancholia, and mania.

The following disturbances of various organs are to be properly considered as secondary to, and depending upon, disturbances of the central nervous system:

(a) Heart.—Bradycardia, tachycardia, and arrhythmia-cordis.

(b) Respiration.—Dyspnoea of various kinds, such as stertor and Cheyne-Stokes respiration. Also, modifications of the odour of the expired air,—hydrogen-monosulphide, etc.

(c) Temperature.—As the sub-normal of impending collapse.

6. And, lastly, the large number of cases in which auto-intoxication is not accompanied by any manifestations in a given part or organ, but has its expression only in a general disturbance of metabolism, such as chlorosis, pernicious anaemia, leucaemia; the various cachexias, diabetes, uric acid diathesis, etc.

ASEPSIS AND ANTISEPSIS IN OBSTETRICS FROM THE STANDPOINT OF PRESENT SCIENTIFIC KNOWLEDGE.

By GEORGE TUCKER HARRISON, M. D., of New York County.

October 14, 1897.

The history of the application of asepsis and antiseptics to the prevention of septic infection before, during, and after childbirth does not date far back. It begins with the researches of Semmelweiss, to whom indisputably belongs the great merit of having first demonstrated, in an exact manner, the aetiological factors active in evoking puerperal septaemia and pyaemia.

It is surely but right, then, that we should pause a moment and recall the work that he did in the cause of suffering humanity, and so do honour to his memory. It may be that a valuable lesson shall be drawn from this retrospect, useful for us all, even though it occasion sharp humiliation.

In the whole history of medicine there is no more pathetic and touching story than the treatment which this man received at the hands of illustrious professors in the great universities,—with rare exceptions—together with the tragic circumstances under which his career was brought to a close.

In the year 1846, Semmelweiss entered upon his duties as assistant to the Vienna Obstetrical Clinic for Physicians. The mortality in this division (No. 1) was, in the years extending from 1840, three times as great as that occurring in Clinic No. 2, which was used exclusively for the instruction of the midwives, although both clinics were under the same roof and subjected to the same conditions with reference to diet, treatment, etc. In the Medical Division, No. 1,

in the course of six years, 1,989 deaths of puerperal women were recorded, the total number admitted being 20,042, a percentage of 9.92 per cent. In the division devoted to the instruction of midwives, there were only 691 deaths in a total of 17,791, a percentage of 3.38 per cent.

The shocking mortality among the young, previously in vigorous health, who sought refuge there on account of the consequences of a weak moment, produced a profound impression upon the mind of Semmelweiss. How could it fail to be otherwise, when he observed that parturient women, generally healthy, young, primiparal, if the first stage of labour were prolonged, died without exception? He in vain tried to discover the cause of the mortality. The consciousness that he was doing all he could to fulfil his responsibilities, and the utter failure that attended his best endeavours, produced a very depressing effect upon the young physician. To use his exact language, it "evoked in me one of those unfortunate feelings which make life unenviable. Everything was problematical, everything was dark, everything was doubtful, only the great number of the dead was an indubitable actuality."

In 1847, just as he had resumed his duties as assistant, after a short absence from the city, spent in refreshing his spirits by gazing upon the treasures of art in Venice, he was surprised by the intelligence of the death of Professor Kolletscha, a pathological anatomist whom he greatly revered. Kolletscha's death was caused by a wound of a finger, inflicted by one of his pupils with a knife he was using in making a dissection of a dead body under the professor's guidance. In the post-mortem examination, there were found in the blood and lymph channels, as well as in the pleura, quite analogous changes to those found in puerperal women who had died of puerperal fever, in the vicinity of internal sexual organs.

"Day and night," remarks Semmelweiss, "pursued me the picture of Kolletscha's disease, and with greater and greater positiveness was I forced to recognise the identity of the

disease of which Kolletscha died with that disease of which I saw so many puerperal women die."

Semmelweiss recognised at once the reason why the mortality in the first clinic was relatively so great. The young physicians came immediately from the work on the cadaver to the lying-in room, and infected the puerperal women with poison from the dead bodies. Henceforth the doubts and perplexities that had weighed upon his spirits disappeared before the illumination of scientific truth, and the path was plain.

Puerperal septaemia had existed long before pathological studies began. It still existed to a greater or less degree in Division No. 2, and similarly in town and country, in circumstances in which there could not possibly be infection from handling parts of the dead body. The horizon of Semmelweiss, therefore, gradually expanded as he ascended the heights of truth and could look down upon the valleys of error and ignorance, until at last he was able to proclaim the doctrine, which is now universally accepted, that "puerperal fever is a fever of absorption, not a single case excepted, determined by the absorption of a decomposed animal organic matter." He further maintains that the septic matters are in the preponderating majority of cases introduced from without. As a necessary deduction from his premises, Semmelweiss issued an order that teachers and pupils must wash their hands in chlorine water before undertaking the examination of a parturient or pregnant woman. From this time, the mortality in his division began to diminish.

It is certainly a matter of astonishment that the great luminaries in obstetrics of that day,—Kiwisch, Siebold, Scanzoni, and others,—instead of calmly and dispassionately investigating the doctrines of Semmelweiss, to ascertain if they rested upon a scientific basis, chose rather to attack them with all the eloquence and dialectic skill they could command. As Zweifel remarks, "one reason for this antagonism lay in the tremendous revolution involved in acceptance of

these views, and the additional fact that they must awaken in many a colleague the feeling of severe blame. Another reason was, however, the unheard of intensity and irritability displayed by Semmelweiss, which had as a consequence that his excellent book was scarcely noticed on its appearance."

When we read the arguments advanced by his opponents, we cannot but have a feeling of sympathy for Semmelweiss in his "intensity and irritability." The doctrine of Semmelweiss, that puerperal fever was a pyaemia or septaemia, taking its point of departure from the genitals, and not a disease *sui generis*, founded an epoch in the history of obstetrics.

It is the very irony of fate, judged from the human standpoint, that this man, to whom science is so deeply indebted, should die of pyaemia in consequence of wound. It has been owing, however, to the acquisition of modern bacteriology that obstetrical asepsis and antiseptis have been founded on a certain scientific basis. Obstetricians may well boast that they attained to correct views upon the prophylaxis of puerperal traumatic diseases—in an empirical way, we must admit,—before the advent of Lister and his followers among surgeons. There are certain general principles that should guide us, in regard to which entire unanimity exists.

In the first place, hands and instruments must be absolutely free from infective matters, or, in other words, they must be sterile.

In the next place, during any operative intervention, it must be our problem to prevent the invasion of micro-organisms.

In the third place, the external genitals of the pregnant or parturient woman must be carefully cleansed with soap and water, and afterward with a solution of corrosive sublimate, before any external examination is made.

In the fourth place, internal examinations should be as few as possible. Diverging views show themselves with

reference to the therapeutical indication in normal and abnormal cases.

Ahlfeld is a zealous advocate of prophylactic vaginal irrigation, even in normal labours.

According to Zweifel, the mucous membrane of the vagina and of the cervical canal should be subjected to a thorough process of scrubbing with a 1 per cent. solution of creolin at the beginning of every birth.

Against the ascendancy of such views I wish to enter my emphatic protest. Such proceedings are not only unnecessary, but may be and often are positively injurious. That all sorts of bacilli and cocci may be found in the vagina has been demonstrated beyond a doubt by many competent observers, but the inference is not logically correct that each vagina should be considered as septic, and therefore vigorous efforts be adopted to make it aseptic. Careful investigations have shown that the micro-organisms which are found in the healthy vagina of a pregnant or parturient woman, who has not been examined, are not of a pathogenic nature, and that if septic germs do attain to the intact vagina, this organ by virtue of its mucous secretion, which possesses bactericidal properties, has the power of cleansing itself and annihilating the septic germs.

The conclusion to which Saft has arrived, after his thoroughly conducted clinical investigations, is that "the healthy vagina of every pregnant woman who has not been touched, although not sterile, may yet be considered aseptic; that is, as containing only such microbes as have no virulence, or only an insignificant degree."

In a paper read before the Virginia State Medical Society in 1887, after quoting the results of the bacteriological studies of Winter, Steffeck, and Doederlein, I made the following remarks: "If these demands made by the bacteriologists just quoted should be generally acceded to, and it should become an universally accepted rule of practice that the cervix and vagina of every parturient woman should be subjected to a thorough and energetic disinfection, I am

convinced that an immense amount of injury would be inflicted.

"In the first place, this disinfection procedure involves the necessity of depriving the parturient canal, from vulva to the os internum, of its physiological mucus, which subserves the purpose of a protecting coat. The mucosa is made thereby more vulnerable from the want of its mucus, as well as by reason of the manipulations. Small epithelial wounds are hardly to be avoided in the use of these measures, and, as a consequence, the entire mucous membrane is prepared for the invasion of infective germs; moreover, the course of birth is mechanically retarded by this loss of the vaginal mucus, one of the physiological functions of this mucus being to diminish friction and facilitate the passage of the child's head through the canal invested by it.

"Every obstetrician of modern times must have been struck by the harsh, dry, rigid feel of the vagina after being douched with a mercuric chloride or carbolic acid solution as contrasted with the moist, yielding, slippery condition of the normal mucous membrane; and hence, it is easily intelligible that the use of antiseptics in the vagina must often exercise an unfavourable course on the second stage of labour. Further clinical observation has but confirmed me in the correctness of these views. The doctrines advocated by Saft are worthy of adoption, and each beginner in obstetrics should lay them to heart."

"Our prophylaxis," he observes, "for the avoidance of puerperal fever, should consist in substituting, to as great an extent as possible, external examination in place of the internal, in employing the inner only when positively indicated; in limiting our operative measures that we have to undertake on the sexual parts as much as possible, and in letting births end by the natural forces, if competent; in observing thorough subjective antisepsis, and in applying antisepsis, so far as the parturient woman is concerned, only to the extent of cleaning the external sexual parts and in completely omitting the disinfection of the inner genital organs."

When fever occurs during the puerperal period, that method of local treatment has been recommended which presumably best combated the disease and prevented its further extension. With some, the indication was to cauterise any existing wound in vagina or parts with iodine or carbolic acid. Others proceeded at once to the use of vaginal and intra-uterine irrigations; others still had recourse to the use of the curette, followed by packing with iodoform gauze. If these measures failed, the indication was removal of the offending cause,—the ablation of the septic uterus.

I have had a large opportunity of studying the effects of local therapeutics in disease of puerperal women with febrile phenomena, in private, consultant, and hospital practice, and I must declare that in reviewing this clinical experience, it is my deliberate judgment that the preponderance of these cases would have been better without such treatment.

The avenue by which infectious germs gain admission into the organism is by the endometrium as a rule.

For illuminating the subject of puerperal endometritis, we owe much to the fruitful studies of Baumm. As he insists, we must discriminate between a putrid and a septic endometritis. The latter is to be divided into: (*a*) localised septic endometritis, and (*b*) septic endometritis followed by a general infection.

In the putrid (saprophytic) endometritis, the underlying uterine wall very quickly and certainly forms a layer of granulation tissue, which affects the detachment of the diseased endometrium. So, too, in the localised septic endometritis, on the zone of bacteria, proliferation follows a zone of reaction,—the round-celled infiltration. The bacteria do not penetrate into the developed granulation tissues. The process is arrested at the uterine wall. It manifestly performs the functions of a limiting wall to the pathogenic streptococci, as it does to the putrefactive germs.

It is quite otherwise in the case of septic endometritis with general infection. Here the emigration of leucocytes is wanting. The streptococci and staphylococci, in addi-

tion to saprophytic bacilli, penetrate into the muscular wall, and may even pass through it into the peritonaeum, and thus evoke a fatal peritonitis. It is easy to understand now, that by a local therapeutic measure this delicate adjustment which the organism has effected might be disturbed in a disastrous manner. The granulation wall might be broken through, and the germs carried into the lymph and blood channels. In this way, according to Saft, are to be explained the chills followed by high fever which so often occur after intra-uterine irrigations, as every obstetrician has observed. The phenomena are evidently called forth by the entrance of the germs into the blood vessels.

As a matter of course, in the case of septic endometritis with general infection local therapeutic measures are useless. Our efforts in the way of therapeutics should, rather, be directed to strengthening the patient's heart and sustaining her vital powers until the disease has been overcome, if that be possible. It has been shown, moreover, by the bacteriological studies of Kroemig, that a few hours after a disinfecting irrigation the same number of germs is again present, and the streptococci remain virulent. The careful clinical observations of Saft and Baumm show that the results obtained by the neglect of local therapeutical proceedings are better than those obtained with their use. I am sure that I have repeatedly obtained good results in consequence of having stopped all local therapeutics and devoted my endeavours to general measures, such as baths, alcohol, diet, ice to the abdomen, etc. It is not to be doubted a moment that the exaggerated use of local therapeutics is responsible for the death of many a valuable life.

The uterine irrigations, it may be admitted, are attended apparently with good results at times when the morbid process is localised in the uterus. To quote the language of Saft,—“To be sure we will not deny that the uterine irrigations do, in fact, in many cases appear to have a momentary success, yet we assert, on the basis of our clinical observations, that all have the same results, at least in puerperal

fever, with our negative therapeutics, nay, often even better results, than with every local therapeutical attempt."

Supposing it to be true that local therapeutical measures may be attended with good results when the process is localised, still the difficulty in practice is to determine the indication in the particular case. We have no certain means of ascertaining with certainty when the morbid process may be assumed to be localised, and when a deeper penetration of the germs may be affirmed.

In the performance of obstetrical operations, I have long since ceased to use disinfecting vaginal irrigations, either before or after the operative procedure. If my hands and instruments are free from germs, I may safely assume that the endometrium and the mucous membrane of the vagina can successfully cope with any micro-organisms already existing there. When the contents of the uterus have undergone putrefactive changes, an intra-uterine douche will be indicated to wash away material which otherwise might prove a favourable nutritive soil for the development of microbes.

It should be mentioned here that Drs. R. Brown, V. Fernwald, and Hugo Hubl, who base their opinion on an extensive experience acquired in Dr. Gustav Brown's Clinic in Vienna, have arrived at the conclusion that the best results are obtained by limiting internal examination as much as possible, and that when it must be undertaken, asepsis for the hands is the first condition. In operative cases, they regard it as all important to irrigate the vagina thoroughly with a solution of lysol as a preliminary measure, and in such operations in which the operating hand or an instrument has passed the os uteri, they insist that a thorough intra-uterine irrigation with potassium permanganate should follow. They have never seen phenomena of intoxication appear after the use of intra-uterine irrigation of potassium permanganate.

After all, it is plain that the most important thing is prophylaxis, and that asepsis is more potent than antiseptis.

Therefore, it should be our endeavour to strive more and more to perfect subjective asepsis, in order to exclude all possibility of infection from this direction.

Says Baumm,—“Agreeing with Reinecke, Ahlfeld, and Poten, we have established the fact that provisionally with 96 per cent. alcohol the best sterilisation of the fingers by far is to be attained.” Farther investigation in this direction is earnestly to be recommended.

DISCUSSION.

DR. DELPHEY asked if he had understood the reader of the paper to object to all operative measures in puerperal sepsis.

DR. HARRISON replied that his doctrine was, that local therapeutic measures were only justifiable when it might be safely assumed that the septic process was localised in the uterus. If not so localised, there could be no sense in such treatment.

DR. DELPHEY recalled a case of a woman whom he had been called to see. She had had a temperature of 105° F., and a rapid pulse. On curetting the uterus, foul pus had escaped. After the operation, the patient had been in collapse for two hours, but had finally recovered. He had operated in other cases where there had been a chill, followed by fever, and in a day or so the fever had dropped to the normal and had remained so. He did not know how we could tell when the septic process had stopped at the uterine wall. It was true that there had been altogether too much meddling with the vagina, both before and during labour. He knew of one obstetrician in this city who was having an unusual number of cases of septicaemia, and he also knew that this same man was doing a *great deal* for his patients. His own practice was to get himself clean and the outside of his patients clean. This ought to be sufficient. He believed, of course, that auto-infection might result from an old pyosalpinx.

DR. HARRISON said that he thought Dr. Delphey had been very fortunate in the first case cited, for if there had been pus in the uterus, there was great danger of the curetting allowing the infective process to gain entrance to the general system. He had had a very beautiful illustration of the correctness of the doctrines expressed in his paper by the conduct of a consultant. His pa-

tient was doing very well, but the consultant insisted that he thought he ought to do something, and therefore resorted to the curette. What happened? These infective germs, which were local and doing no harm, gained entrance into the blood vessels, and the result was that he produced in that woman a pyaemia. The woman's life was in the greatest peril for a considerable time. She had a crural thrombosis, and some local suppuration, but eventually recovered. By such rude methods, the beautiful adjustment of Nature to limit the poison was disturbed, and frequently with the most disastrous results.

THE · DIAGNOSIS AND MANAGEMENT OF LABOUR IN OCCIPITO POSTERIOR POSITIONS.

By CHARLES H. GLIDDEN, M. D., of Herkimer County.

Read by title, October 14, 1897.

The diagnosis and management of occipito posterior positions have given me more anxiety and caused me more hard work than any other single class of cases which I have had to manage. The importance of a close study of this particular abnormal presentation, has been impressed upon me, after an experience of sixteen years of more or less active obstetric work, during which time I have had upwards of thirty cases of persistent vertex posterior presentation, nearly all of which required instrumental aid in delivery. The infant mortality, the damage done to the maternal soft parts, the prolonged suffering and shock to both mother and child, and the outlay of strength and skill on the part of the obstetrician in the management of these cases, all justify our earnest consideration of this subject.

At the end of pregnancy, the cephalic end of the child presents in nearly 97 per cent. of all cases. In 75 per cent. of all head presentations, the occiput points to the left side of the mother, and in 73 per cent. anteriorly. There remains, then, 25 per cent. of cases in which the occiput points to the right side of the mother, the great majority of them posteriorly. A large proportion of these right posterior presentations become right anterior by a process of rotation during the second stage of labour, and are, therefore, uncomplicated. It is only those cases that remain persistently right posterior that will present unusual difficulties in management. It would be interesting to study the aeti-

ology of the various presentations, but that is a large subject in itself, and not necessary to the consideration of our topic to-day.

The diagnosis of right posterior position of vertex is, I believe, rarely made in private practice, most physicians being content when they have learned the mere fact that the head presents. That this is very far from being a complete diagnosis in any case, I have abundantly proven in the earlier years of my own experience. Granted that it is important to know that the head presents at the beginning of labour, it is more important to know the relative position of the vertex to the pelvis.

That it is possible to make a correct diagnosis of the presentation at the first examination, in a majority of cases, there can be no doubt, even at the very earliest stage of labour, or, better still, before labour has actually begun. This may be done chiefly through the abdominal walls. The gynaecologist becomes expert in the diagnosis of tumors by abdominal palpation, bi-manual manipulation, etc. Why should not the obstetrician become equally expert in determining the position of the foetus in utero by the same methods? It is undoubtedly true that the lives of many infants might be spared if more intelligent methods of determining and correcting mal-presentation were observed early in labour. It is probably also true that the number of idiots and epileptics might be greatly lessened if more scientific methods of delivery were adopted, instead of the almost universal use of the obstetric forceps, regardless of position or presentation, and regardless of the amount of injury to the foetal head.

Abdominal palpation and auscultation are practised in all "lying-in" asylums as a matter of routine, just as much as the careful attention to the details of asepsis and the weekly examination of the urine. In a recent report of the Preston Retreat, in Philadelphia, Dr. Norris says, "Diagnosis by abdominal palpation is highly valued, and constantly practised." Of course, in private practice, opportunities for examination are not so great, and conveniences not so many,

as in institutions. But, if one appreciates the importance and necessity of an early diagnosis of presentation and position, it is no more difficult to make these examinations than it is to examine the urine, a duty but few physicians neglect in these days.

The exact method of diagnosis by external means is described as follows by Reynolds of Harvard: "Abdominal inspection is mainly valuable as affording a hint of the existence of transverse presentations, and of multiple pregnancy."

"Palpation is the most important part of the abdominal examination. It should be performed only in the intervals between the pains, provided labour has already begun, all pressure of the hands being intermitted with the appearance of each contraction. The physician, standing by the patient's side, facing towards the feet, presses the finger tips of each hand, with a gradual and gentle motion, downward behind the symphysis pubis in search of the foetal head, which, in cephalic presentation, is almost always to be felt in this situation as a marked transverse check to the examining hand. In this examination, care should be taken to note on which side the head is most plainly perceived, since with a well-flexed head the frontal extremity is much the more easily reached; with the partially extended head but little difference is to be noticed, and in face presentations the occiput is much the more distinct." "The fundus should then be palpated as a further means of excluding a breach presentation."

Again: "In determining the position of the foetal head, the hands should be placed along the sides of the uterus, and should make gentle but deep pressure towards each other, that is, with the uterus and child directly between their palms, in the effort to estimate the relative resistance afforded by the right and left side of the uterus, the flat, firm back of the child usually presenting a resistance to pressure that is markedly greater than that of the yielding abdomen and the movable limbs."

Jewett says, on the same subject,—“The child's back is

identified by the length and breadth of the resisting plane which is offered to the examining touch, and by absence of a sulcus between it and the foetal head. The side of the child presents a narrower plane than the back, and a distinct sulcus separates it from the head. The small parts are usually felt as nodules, which glide about under the touch." "By palpation, then, we ought to be able to determine not only the presentation, but the position, because the occiput must point towards that quarter of the pelvis in which the foetal back is found. Excluding those very infrequent positions, O. L. P. and O. D. A., it will be safe to say that all cases in which the back of the child points to the left side of the mother, will be occipito left anterior, and all those in which it is found to the right side of the mother, occipito right posterior."

It is certainly strange that we have not more generally practised abdominal palpation, as an aid in determining the presentation and position of the foetus, at the beginning of labour. I have never seen it carefully undertaken by any physician, and none of the older text-books contain any adequate description of the methods to be employed.

Auscultation gives valuable evidence as to the condition of the foetus, and may help somewhat in recognising its position. In vertex presentation, the heart sounds are heard most distinctly below the umbilicus, on right or left side of the mother, according to the position of the back of the child.

Bi-manual manipulation is used chiefly in determining the degree of flexion or extension of the head, and is of great importance in management, it being a valuable means of assisting flexion, as well as rotation, during the second stage.

Most of my cases have been primiparae, and in these, especially, the careful exploration of the abdomen externally will be of much more value in determining the position than the vaginal touch. In fact, very little can be learned by digital examination alone in a primipara, because the

soft parts are generally rigid and unyielding, and the resistance of the patient to prolonged examination at such times is very considerable. Still, it may be possible, after long experience and carefully educated touch, to determine the position of the foetal head by noting the relative location of the large anterior and small posterior fontanelles, and the general direction of the sutures leading from them. But it is exceedingly difficult to satisfactorily locate either sutures or fontanelles through the walls of the cervix, or through the unruptured membranes, and it is well to repeat, here, that the diagnosis of right posterior position must be made early, and before the membranes are ruptured, if it is expected to correct the mal-position by any manipulation, aside from operative interference.

The last point, with reference to diagnosis of posterior position, to be mentioned, is one peculiarly characteristic, viz.: A prolonged first stage. In a given case, where a woman has been in labour from four to six hours, or longer, with but little advancement of head, with slight dilatation of the cervix, with irregular and imperfect contractions of the uterus, with an apparent inability on the part of the patient to make the ordinary expulsive efforts, then we may suspect a vertex posterior position. In such a case, if every means has not already been adopted, to determine with accuracy the exact position of the foetal head, now is the time to do so. Abdominal inspection, palpation, bimanual manipulation, and auscultation of foetal heart should now be practised in addition to the digital search for the fontanelles and sutures, being careful not to rupture the membranes.

MANAGEMENT.

Having determined that we have a case of R. O. P. presentation, how shall we proceed to deliver a living child, with the least amount of injury to the mother? Its *successful* management will depend largely upon an early diagnosis. It will be exceedingly fortunate if we have made this diagno-

sis some weeks prior to term, as then much may be expected from postural treatment.

When the patient is placed in the knee chest position, the anterior wall and fundus of the uterus are its lowest parts, and by influence of gravity the position of the child must be somewhat changed. If its head drops away from the pelvic brim, it will then be free to rotate on its axis. This position should be assumed by the patient several times daily, as long a time as possible before labour,—at least, three or four weeks. She should remain in this position several minutes each time, and then recline on the side for a short time before rising, in the hope that as the child's head again settles down against the brim it may attain an anterior position. The position must be such that the abdomen does not come in contact with either the bed or with the thighs of the patient. If no examination of the patient has been made prior to the commencement of labour, it is still worth while to try postural treatment. The position must now be maintained as long as possible, and between pains, it may be possible to aid rotation, but this is doubtful, as any manipulation of the uterus, externally, increases the frequency and force of the contractions, and so defeats the object desired. With a tractable patient, who will assume this position and remain there until rotation has taken place, we may succeed in engaging the head in the anterior position, and keeping it there, the patient keeping the prone position as much as possible, with this end in view.

As before stated, a good proportion of these right posterior presentations become right anterior by a natural process of rotation during the second stage of labour, but the process by which this rotation is accomplished is, unfortunately, so delicately balanced that it is always likely to fail. It is only those cases that remain persistently right posterior that will present unusual difficulties in management.

The mechanism of labour in R. O. P. positions is quite complicated, and it will be sufficient, here, to say that it is necessary that the foetal head should enter the pelvic brim

well flexed, in order that the subsequent progress may be satisfactory, and that upon the amount of extension will depend the difficulties to be encountered. That is to say: The more the head is extended, the more difficult will be its passage, and the less likelihood of rotation. From the nature of things, there being a mechanical misfit between the head and pelvis, extension is likely to take place more or less markedly, during the slow passage of the head through the superior strait, and a decided moulding of the head, also. Therefore, the principal duty of the accoucheur, at this time, is to make quite frequent examinations, in order to mark the degree of extension and antagonise it as much as possible, and hope for favourable progress. It is not wise to wait until both mother and child are exhausted.

Unless there is pretty prompt progress, interference will quite surely be necessary. Before deciding exactly what course to pursue, the dimensions of the pelvis should be carefully estimated, or, better still, accurately measured, and also the foetal head, so far as possible. If the case be a primipara, the rigidity of the soft parts must also be considered. If there be quite a roomy pelvis and easy adaptation of the head, careful bi-manual manipulation before rupture of the membranes may succeed in pushing the forehead of the child upward and forward, freeing it from the brim, in the hope that on its re-entrance it may be better situated. After rupture of the membranes, it will be well to anaesthetise the patient, and then introduce the hand, dilating the os sufficiently, and push the forehead upward until it touches the chest, and maintain this complete flexion, by pressure upon the head through the abdominal wall, until the occiput has been well forced down by the uterine contractions. These directions I have followed out carefully in quite a large number of cases, but with not very flattering success.

Three methods of delivery are now possible, from which we must select, viz.: Manual rotation and immediate application of the forceps, forceps without rotation, and podalic

version. In skilful hands, the first method is probably under all circumstances the most satisfactory, and certainly the most scientific, but it is difficult to perform, and rather than make protracted efforts at manual rotation, it would be much wiser to perform version at once. It has been my fortune or misfortune to have about thirty of these persistent posterior positions to manage, and it is my belief that, in the majority of cases, taking into consideration the safety of both mother and child, the forceps, carefully and skilfully handled, without protracted attempts at rotation, offers the best means of terminating these cases. The amount of traction is a matter of consideration. Only after considerable experience can the safety line in this respect be determined. Traction should only be practised during uterine contractions, and in the interval the forceps should be unlocked and the head pushed back slightly. Continued pressure of the locked forceps, or holding on to them to prevent the head from receding, should never be practised. If good progress follows quite promptly, there need be no fear of an ultimate safe delivery. If great disparity exists between the diameter of the pelvis and the foetal head, or if there be uterine inertia, or if the mother or child seem unable to endure the prolonged strain, or if the condition of the soft parts of the mother make it probable that great damage will be done, as extensive laceration, etc., then at once the forceps should be removed and with the patient completely anaesthetised, podalic version should be performed. It is probably true that there is less danger of laceration in delivery with forceps in anterior position than in the extraction of the after coming head in version.

In every case attempt should be made at rotation, whether the membranes have ruptured or not. If the liquor amnii has pretty well drained off, then there will be less probability of success and the forceps may now be applied without rotation. If the pelvis is fairly roomy and the foetal head not unduly large or ossified, you will be able to bring the occiput down with the head well flexed, and keeping in

mind the normal mechanism, assist in the rotation of the occiput down and to the right, and finally bring it out under the pubes through the outlet in almost a normal right anterior position. In three instances I have been able to accomplish this, thereby saving the extensive laceration of the perinaeum that must surely occur when the occiput is dragged out in posterior positions.

The safety of the child will, of course, depend largely upon the length of time consumed in the delivery, the amount of pressure produced by the forceps, and the degree of adaptation between head and pelvis. In normal labour pressure upon the head is intermittent and the moulding process a slow one. During instrumental delivery we should imitate nature as far as possible. Traction on the forceps should be intermittent, and in the intervals unlocked, in order to relieve the head as much as possible of pressure.

Unless the head rotates into an anterior position as it passes through the pelvic outlet, the pressure of the frontal and parietal bones against the pubes of the mother will be tremendous, and will likely produce fatal injury to the brain. The shock of such prolonged operation must be considerable, and causes the death of some infants. If care and patience be exercised and time given for the slow moulding of the head, we shall generally have the satisfaction of delivering a living child. I do not believe the risks to the child in posterior positions are much greater in delivery with the forceps, skilfully handled, than in version. Five infants out of my thirty cases have been still born. Three of these were delivered with forceps and two by version. All the others were delivered with forceps, after attempt at manual rotation. In three, as above stated, rotation took place during the second stage. In only one instance was the result bad for the mother, and this only resulted in prolonged convalescence, neuritis from pressure, and laceration of cervix and perinaeum.

NOTES ON THE RECENT INTERNATIONAL MEDICAL CONGRESS.

By F. O. DONOHUE, M. D., of Onondaga County.

Read by title, October 14, 1897.

The meeting of the Twelfth International Medical Congress at Moscow, from August 19 to 26 inclusive, was a grand success from the standpoint of numbers. It was largely attended. Upwards of 7,000 physicians were present, all countries being represented. About 3,000 ladies accompanied their husbands, making a total of about 10,000 strangers in Moscow during the congress week. The United States was represented by a less number proportionately than that of any other nation. The number of physicians from the United States was stated to be 140. I counted the number registered at the United States Central Bureau as exactly twenty-six. According to the official report of the secretary-general as to the number present, there must have been many present who did not register. Of course Russia was largely represented. Every medical association throughout the vast Russian empire was numerously represented. There are at the present time no fewer than 120 medical societies in the whole empire, and from appearances at the congress these turned out *en masse*. It was officially reported that 3,500 Russians were present. Germany came next in the order of numbers in representation, numbering 800; then Austria with a like number; then France with 400. All the European nations were well represented from Scandinavia to Turkey. Asia sent numerous delegates from Siam to Japan. Mexico and Central America and the South American republics were well represented, as was Oceanica, Australasia, and Australia. Next to the United States, of the

larger nations, England had the smallest representation; it was said to be 140. This was in part doubtless due to the meeting of the British Medical Association at about the same time at Montreal, which naturally attracted the British medical attention. A representative body of English medical men was present, however, presided over by Sir William McCormack. The delegates of the United States had no organisation; each one acting for himself alone followed his fancy, identifying himself with that part of the congress which most interested him.

The attendance far exceeded the maximum anticipated. It was thought by those having the matter in charge that not more than 6,000 need be expected. Doubtless the large attendance was in a great measure due to the inducements offered and provided by the Tzar, who caused free passes to be issued in Russia to all visiting delegates, and, moreover, Moscow itself proved a great drawing attraction by reason of its interesting history and the traditions associated with it. The management certainly did everything possible for the entertainment and convenience of the delegates. Delegates were given free first-class railroad tickets on reaching the frontier of Russia, upon producing passports and certification as delegates. Your representative entered Russia *via* Helsingfors, the capital city of Finland, the most northern province of Russia, and was given free passes and shown every courtesy by the Finnish officials.

Excepting for the intense heat which prevailed at Moscow, it was both ideal and real as a place in which to hold the congress. The official management was thoroughly organised; every detail was perfected looking toward the comfort and entertainment of delegates. Passport formalities caused no trouble.

The central meeting-place or bureau was admirably suited for the purpose. It was a building known as the "*Manege*," which means riding-school, situated in the very centre of the city, hard by the university. This building is 640 feet long by 140 feet wide, in the shape of a right-angled parallelo-

gram, without partitions of any kind, the roof unsupported by pillars—a wonderful piece of architecture; built in 1817, and at that time the largest building in the world with a roof unsupported by pillars. It is in the form of a Grecian temple, with Corinthian columns of solid granite on all sides, rising to a height of 40 feet. The floor of earth was on a level with the streets. It was cool and commodious, and afforded a comfortable retreat for the mighty host of physicians sweltering in the heat of Moscow. In this building were the registry bureau, money exchange, telegraph, postal facilities, bureau of information, excursions, social functions, etc.

The official language of the congress was French. German was heard on all sides, and one could get on very well with a smattering of any language, except English. The English language is rarely, if ever, heard in Russia. No little difficulty was experienced by a part of the American contingent whose only means of communication was the mother tongue.

The scientific part of the congress was opened at this building under the presidency of His Imperial Highness, the Grand Duke Sergius Alexandrovitch, brother of the Tzar, on August 19. About 3,000 members were present. It was intended that the opening meeting should be held at the Grand Imperial Theatre, but it was of insufficient seating capacity, although the largest theatre in the world. A series of addresses were delivered by the representatives of the different countries. The first one was by a German, then an Austrian; then Hungary, France, and Roumania; then by England; afterwards fifteen other representatives, including the United States, Japan, Mexico, Turkey, and, finally, Russia and Moscow.

After these preliminary addresses were delivered, the officers of the congress were elected. Professor Sklifosowski was elected president, and Prof. W. R. Roth was elected secretary-general. Both of these gentlemen are residents of Moscow.

Then followed a series of opening scientific addresses, the first being delivered by that Nestor of German medicine,

Prof. Rudolph Virchow. Then followed Dr. Lauder Brunton of London. Professor Virchow's address was on the continuity of life, and was pronounced interesting by those who could understand the German language. Dr. Brunton's address was very instructive, dealing with practical medicine. Professor Launelogue of Paris read a paper on treatment of tuberculosis, which ended the proceedings of the first general meeting.

The International Congress followed the examples of its predecessors, and divided itself in sections, so that after the first general meeting, each member attached himself to that department of medicine in which he was most interested.

The University was given up to sectional meetings, as were also many public buildings and hospitals, of which there are many in Moscow, well equipped with every necessity. One of the lying-in hospitals in which I was especially interested is, I believe, the largest in Europe, affording accommodations for 4,000 patients. This hospital is, I was informed, kept for almost the exclusive use of lying-in women whose children are born out of wedlock. In this connection it may be proper to say that a high degree of morality does not exist among the Russians in their sexual relations. Yet criminal abortion is practically unknown, and is looked upon as a sin and crime. The large number of illegitimate children born in Russia is the outcome, in part, of the military system, which imposes restrictions upon the regular soldiers, who are not allowed to marry. The government, however, takes care of their children. Associated with these lying-in hospitals are foundling hospitals where children are bound out to foster-parents. The mother in each instance is allowed occasional communication with her child. Thus does Russia look after the increase in her population, which is increasing apace in marked contrast with France, which the census shows has not increased during the past decade, and yet no one claims for France a high degree of morality.

While the official language of the congress was French, no

paper was, so far as I know, prohibited, no matter in what language it was to be delivered. Several addresses were to my knowledge delivered in English. Dr. Nicholas Senn of Chicago delivered an address in English in the surgical section on abdominal surgery. His auditors were few for the reason that his address was not understood. Dr. J. B. Murphy of Chicago delivered an address on the end to end union of arteries. Dr. Frank of Chicago delivered an address on a new appliance intended for use in resection of the bowels. Each of these speakers had a small audience. While Tzerney of Heidelberg, Sematzky of St. Petersburg, Jennesco of Bucharest, Lombroso of Turin, Leyden of Berlin, and Ziemsen of Austria were speaking, they were greeted with large audiences. I am sure that this was in part due at least to the fact that, aside from their great reputations, their addresses were delivered in the official language of the congress.

Special operations were performed at the hospitals and clinics given in honour of the congress. Every facility was afforded for the work of the congress. Journals of the proceedings were published daily and distributed to members of the congress. Advance programmes of each day's proceedings were also published.

While Moscow has numerous well-equipped hotels, they were in no degree adequate in accommodating all the delegates. Private homes were thrown open for their entertainment, and to the credit of the Russians be it said, that no advantage was taken because of the large number seeking accommodations. Very moderate charges prevailed, and the bureau having this matter in hand sought to anticipate the desires and tastes of the delegates in lodging them with persons who could converse with them in their own tongue. It may be said that the time and place were opportune to visit Russia, and many availed themselves of the advantages. Each delegate was furnished with a solid silver badge to be worn on his coat, and this was all that was needed to gain entrance at any place of interest.

Nor was the inner man forgotten. Every delegate was given free noon-day lunch at the expense of the Tzar, abundance of food and of good quality, with any sort of drink desired,—tea, lemonade, beer, wines in unlimited quantities.

Social functions were provided for their entertainment,—balls, garden parties, soirees. The Grand Duke Sergius Alexandrovitch and Grand Duchess gave a soiree on the eve of the 25th in honour of the delegates. At these functions, also, the English-speaking delegates did not receive the full measure of enjoyment, because of a lack of linguistic accomplishments. The only circumstance which tended seriously to mar the pleasure and enjoyment of the members of the congress was the lack of railroad facilities to convey them on their return from Moscow. This was particularly the case with regard to sleeping-car compartments, nor is this to be wondered at, when it is considered that a vast crowd of 10,000 people were eager to leave Moscow within forty-eight hours after the close of the congress. It would tax the facilities of any railroad to the fullest to meet this demand.

All the countries of continental Europe, except Germany, accorded a reduction of railway fares of from 30 to 50 per cent. This action on the part of Germany was severely criticised, seeing that the Germans were willing to take unto themselves the lion's share of the good things of the congress at the expense of other nations. On the homeward journey, the ride was disagreeable from Moscow through Poland to Warsaw and Alexandrovo, a distance of 1,000 miles, to the Russian frontier station. The country through which the railroad passes is of a fine red sand loam. The velocity of the trains while not great—thirty miles an hour is fast in Russia—caused this sand to rise and permeate every crack and crevice of the cars, which, combined with the heat, made the journey very unpleasant.

After the congress, a series of soirees, levees, and social functions were arranged at St. Petersburg, to which all the delegates were invited. It was arranged that the Tzar was to receive the delegates.

Excursions were arranged to the Crimea, Ural, and Caucasus mountains, Black, Caspian, and Azov seas, to which all were invited. Free tickets were given to all the delegates who desired them, valid until September 15th. Probably no more interesting city than Moscow could be selected for such a meeting; out of the beaten track of tourists and travelers generally, because of the difficulty encountered in entering Russia. The Kremlin, situated in the centre of Moscow, built centuries ago by the Tartars, in form nearly triangular, surrounded by a wall on two sides, and the river Moskwa on the other, for defence; its churches with their gilded domes, its numerous palaces, all attracted the doctors away from the meetings of the congress.

While St. Petersburg is the official capital of Russia, Moscow is its real capital. It is here inside the Kremlin that the future Tzars must be baptised; here, also, must they be crowned inside the holy Kremlin. The city itself has grown around the Kremlin in the most irregular way, without any plan. Its architecture embraces all styles and kinds, from the most primitive to the most ornate and classical. Extremes in everything are here met with. The Turkish mosque is here side by side with the French café. In one foundling hospital inside the Kremlin 25,000 children are sometimes under its support in a single year. There was no lack of variety of entertainment for the members of the congress.

Was it a success from a scientific standpoint? The publication of the addresses will settle this question. There were in attendance men whose reputations are not local or, indeed, national; many were there of world-wide fame, who participated in its deliberations. The proceedings will be translated and published in each of the principal languages, a copy of which will be furnished to every member in the language of his country.

In a large sense, it was a decided success. It brought together a mighty host of physicians from all parts of the world, all actuated by one desire,—the alleviation of human suffering and prolongation of life.

TUBERCULOSIS OF THE TONSIL.

By SEYMOUR OPPENHEIMER, M. D., of New York County.

Read by title, October 14, 1897.

In the study of tuberculosis of the tonsils it becomes necessary to divide the disease into two classes,—the primary and the secondary.

The primary form of the disease is very rare, but few cases having been reported from time to time, and the authenticity of these cases admits of considerable doubt. Stoesch submitted twenty tonsils, removed at post mortem, to minute microscopical examination, and found two presenting tubercular changes.

That the tubercle bacilli are present in a considerable proportion of apparently normal tonsils, and especially in the hypertrophic form of tonsilitis, has been demonstrated by several continental pathologists and laryngologists, experimental inoculations being performed upon guinea pigs and rabbits.

In all these experiments, the tonsils selected were removed from the ordinary class of patients seen in the throat clinic. Hypertrophy was present, but no evidence of either local or general tuberculosis could be detected.

Shenker and Kruchmann, in an extensive consideration of the pathology of the disease, established the causal relations between primary infection of the tonsillar tissues with the tubercle bacilli and tuberculosis of the cervical lymph-glands. Primary infection may occur either from the use of unclean instruments (especially the laryngoscope, which is very difficult to keep surgically clean), from the inhalation of air containing the tubercle bacilli, or from the ingestion of tuberculous food.

In dispensary practise, where the number of patients treated is, within a limited space of time, very large, it is almost marvelous that more cases of tubercular infection are not produced. The examining instruments are not properly cleansed previous to their use with each patient, frequently being merely wiped off with a towel or napkin which has done service for probably ten or twenty other cases.

No doubt the tubercle bacilli are frequently transmitted from one patient to another in this way, but from the natural resistance of the parts, infection does not take place. The dust in the majority of dwellings, especially those occupied by the poorer classes, contains a considerable number of bacilli, and as the subjects of the ordinary hyperplasia of the tonsil sleep and usually live with the mouth open, using the nose but seldom as the primary respiratory organ, it is very apparent why the bacilli should be found in the tonsillar crypts.

It is hardly necessary to say much about the ingestion of food as a cause for local infection, for, with the exception of milk, the majority of food stuffs ordinarily used are free from the contagium.

On examination of the tonsils suspected to be the seat of primary tuberculosis, we will not be able to discover anything peculiar from a diagnostic point of view. They may appear normal, or, as is usually the case, they are hypertrophied. If a small piece be removed for diagnostic purposes, and subjected to staining with haematoxylin and eosin, the lymph cells will be coloured bluish red, while the tubercle bacilli will assume that peculiar shade known as eosin red.

Occasionally the diagnosis must be based on this staining method alone, but usually it is associated with giant cells and tubercles, more rarely with caseation. Primary tuberculosis, although rare, is probably present more frequently than we suspect, and possibly many cases of pulmonary tuberculosis receive their infection through the tonsils.

When the tonsil is the seat of a tubercular process, distinctly localised in this gland, one of two results takes

place: Either the disease remains local, not affecting the patient in any way and is only discovered after the removal of the tonsil for other causes, or pulmonary tuberculosis develops from infection through the lymphatic system.

The treatment of this primary form is very simple, and if the disease is localised in the tonsil, is absolutely curative, by removing the tonsillar mass by whatever means suitable to the individual case.

Tuberculosis of the tonsils secondary to the pulmonary form is of quite frequent occurrence.

If you consider that, according to reliable general statistics, about every seventh human being dies from pulmonary tuberculosis, while post-mortem records of various large hospitals prove that certainly not less than 18 per cent. of all patients dying from tuberculosis of the lungs have some pharyngeal or laryngeal complication, you will see that, broadly speaking, every thirty-fifth patient dying in the practice of the general practitioner is afflicted with the cruel disease under consideration.

Strassman finds the tonsil involved in thirteen out of twenty-one fatal cases.

On examination of the fauces, the seat of tubercular changes, we find the tonsils hypertrophied with no distinctive lesions, or ulceration may be present over the tonsil, soft palate, and pharynx.

The ulcers on the external surface of the tonsil are uneven or ovoid in shape, pale in colour at their circumference, but with a red base, slightly granulating. The anaemia of the surrounding mucous membrane is well marked.

The ulceration is very superficial, extending laterally rather than deeply, the surface being covered with a dirty, yellowish-grey secretion.

The soft palate and uvula are usually thickened with a semi-solid effusion peculiar to this disease and known as sub-mucous infiltration, in contradistinction to deep infiltration, as seen in syphilitic disease. Frequently the tissues are thinned from atrophy and lack of nutrition, and the epithe-

lium covering the tonsil is thinned in patches from sub-mucous swelling, or from the pressure exerted by a distended crypt.

The mucous membrane of the pharyngeal cavity and soft palate is markedly anaemic, often strangely contrasting with the apparently normal complexion of the patient. This anaemia shows itself in the form of either a general pallour of the soft palate and pharynx, or in the form of what at first sight might almost appear to be congestion, but which on closer inspection is seen in reality to be infection of the capillary vessels, so marked that you can distinguish even the smallest branches on the intensely anaemic mucous membrane.

In the neighbourhood of the ulcers are small elevations or tubercles, varying in colour from a deep red to yellow.

Schnitzler made the diagnosis of tuberculosis in one case, even before there were signs of the disease in the lungs, by excising one of these small granulomata and finding tubercle bacilli present.

The local symptoms are principally pain and dysphagia. The pain is intense, but is usually confined to the diseased region. Frequently the suffering is so intense that it is impossible for the patient to swallow without the use of an anodyne, and in this connection it is interesting to note that liquids are generally more poorly borne than solids or semi-solids. The pain is especially severe if the posterior pharyngeal wall and larynx is involved. The extreme dysphagia will often necessitate the use of nutrient enemata, especially towards the fatal termination of the disease.

The voice is not, as a rule, impaired unless the larynx is involved, but if the disease is far advanced, and especially if the tonsils are hypertrophied or ulcerated, the voice is changed in quality and its use is extremely painful. The mere swallowing of the saliva even causes excruciating pain, and the patient is often desirous of starvation to avoid the agony attendant upon swallowing.

Taste and smell may both be impaired, or even abolished,

and the breath has a peculiar, offensive odour, which is more or less characteristic of the disease in this locality.

The diagnosis of tuberculosis of the tonsil in the majority of cases can be readily made, especially if there are marked pulmonary changes. The characteristic ulcers in the tonsils and soft palate, the intense pain, the emaciation with hectic fever, are all readily recognised. A study of the temperature affords considerable evidence in favour of the disease, if the tonsillar lesions are not well marked.

There are three diseases resembling to some extent tonsillar tuberculosis, namely, lupus, syphilis, and cancer. Lupus of the tonsils and pharynx is very rare, and the co-existence of a cutaneous lesion will help you clear up any doubt.

Cancer can usually be distinguished by the ulcerations, which are deep and angry looking; its course is very rapid, and the cachexia is generally present. In the early stages of carcinoma, before ulceration is present, recourse to the microscope, and the finding of the characteristic epithelial structure of carcinoma, readily makes the diagnosis.

As to syphilis, the diagnosis may occasionally present greater difficulties; the more so as you must bear in mind the possibility of a double infection being present in one and the same patient. The tonsillar lesion may be syphilitic while the pulmonary is tubercular. Resort to the therapeutic test with mercury and iodide of potassium in sufficient dosage will assist in establishing the diagnosis.

In the more ordinary cases, however, tubercular affections are distinguished by the pallour of the affected parts, the syphilitic lesions being more of a decidedly inflammatory character. The development of the tubercular ulcer is slow; that of the syphilitic more rapid. The general diagnostic features of syphilis, the absence of fever, with the history of a primary sore and the post-cervical glandular enlargement, are not present in tubercular affections.

The characteristic pathological changes of tuberculosis of the tonsil are not different in any respect from those seen in

other portions of the body, the locality of the disease alone giving rise to its definite local symptomatology. Before the ulcers form, we must have the tubercle. These enlargements may occur as part of the morbid changes of other diseases, as syphilis, for example, but the tubercle of tuberculosis is characteristic of the affection, and is seen in no other disease.

Briefly, it may be described as consisting of an enlargement of connective tissue, translucent, grayish in colour, and about the size of a millet seed. The cellular elements are lymphoid and round, varying in size. The nuclei are generally small and homogeneous. Between the cells is found fibrous tissue, not very vascular. The vessels are never newly formed, but have existed in the tonsillar tissue before the development of the tubercle, the latter growing around them. The blood supply is at all times very deficient. The nodules may be isolated, or joined together in a mass from inflammatory changes, imperfect granulation tissue resulting. As the nodule grows older, caseation begins in the centre; this degenerating process progressing until the nodule is a mass of granular débris.

The prognosis is, as a rule, very unfavourable. If the tonsil alone is affected, removal or prompt and radical medication offers some hope; but if ulceration is present, and the larynx and pharynx are involved, little can be done except such palliative measures as will prolong life and make the patient as comfortable as possible. As we see by the prognosis, treatment can at best be but palliative.

Lennox Browne outlines the treatment as follows: Counteract the general tuberculous tendencies, give as much functional rest to the diseased parts as possible, relieve the pain in swallowing, administer suitable nourishment, and attempt to heal the ulceration.

The constitutional treatment must always be enforced, as we cannot even hope for any success in the treatment unless attention to the general health is considered. Cod-liver oil, the hypophosphites, nutritive tonics, proper feeding, etc.,

should be carried out as if the case were pulmonary in character.

Functional rest of the parts is extremely important, as every time the patient swallows or talks, the movements of the muscles concerned in phonation or deglutition keep up the irritation.

If the ulcerations are extensive, speaking must be prohibited, and food administered by the oesophageal or rectal tube.

Relief of the pain in swallowing will necessitate a careful consideration of the food to be used. The nutriment should be of a semi-solid consistency, such as jelly, eggs, poached or soft boiled, scraped meat juice, etc. This will give an idea of the character of the food required, but, of course, each case may require a special dietary of its own. Heat is usually very painful, while cold is grateful, so ice may be given in small pieces.

Of the drugs used to relieve the pain, cocaine is undoubtedly the best. I have lately been employing a pastille composed of morphia, cocaine, and antipyrin, which the patient allows to dissolve in the mouth.

The treatment of the ulcers is very unsatisfactory. Without enumerating the long list of drugs vaunted as being of value, but as yet in the hands of the majority of laryngologists only proving failures, we will confine ourselves to but one treatment, that of curetting the ulcers with the sharp spoon and then cauterising with lactic acid. We owe the introduction of this drug into the therapeutics of tonsillar tuberculosis to Krause of Berlin.

Moorhof of Vienna had extolled the merits of this drug in the treatment of tubercular disease of the joints. Krause utilised the suggestion for the larynx. In the majority of cases this has given the best results, cocaine being used preparatory to the application.

Of the internal remedies recommended at various times for the treatment of pulmonary tuberculosis, I now, in most cases, employ but one, namely, creosote in large doses. The

use of this drug, combined with lactic acid applications, has yielded the best results in my hands.

In conclusion, quoting Lemon, "I can only recommend you, so long as we have nothing better, to adopt this method of treatment, and I hope your endeavours may be crowned with successful results."

EXPERIENTIA FALLAX.

By H. D. DIDAMA, M. D., of Onandaga County.

October 14, 1897.

In a recent biography published by the Sydenham Society, the claim is made that the great Hippocrates was, above all others, the physician of experience and common sense.

For more than two thousand years, his precepts and rules of practice, founded on extensive observation and careful experiment and subjected to the scrutiny of reason, were accepted as unquestionable by the great majority of the medical profession.

One of the precepts of this Father of Medicine which came down to modern times and was advocated not alone on the authority of its wise and eminent author, but because its truth, as alleged, had been tested and confirmed by the personal, clinical experience of an innumerable multitude of disciples, was the efficacy and necessity of venesection in inflammatory diseases, especially those affecting the lungs and pleura.

The celebrated Claudius Galen, who first attracted notice in the second century, indorsed this dictum of the master and recommended that bleeding in pneumonia be carried to syncope, whatever the period of the disease.

Galen's doctrines so ruled the medical world for 1,300 years that in 1550 Dr. Geynes was summoned before the London Medical Society for impugning the infallibility of Hippocrates and was received into the college only on his confession of error and his humble recantation.

Nearly all the learned teachers and authors and the physicians of high and low degree followed the Galenic recommendations to within sixty years of the present time. Bouillard, of Piedmont, in 1560, taught that blood ought to

be drawn in all diseases—chronic as well as acute—frequently and abundantly. In 1666, Sydenham—the English Hippocrates—wrote his treatise on fevers and highly commended venesection. His commentator, Botallus, declared that 100,000 men perish from want of bleeding where one perishes from excessive bloodletting.

The distinguished Gordon said that he lost every puerperal fever patient whom he bled only to the extent of 10 or 12 ounces, but that all recovered when he had the courage to abstract 20 or 30 ounces.

Cullen, the eminent Glasgow professor, advocated, in 1777, bleeding in fevers, quinsy, and all inflammatory diseases.

Benjamin Rush, in 1793, declared that in pernicious fever bloodletting should be repeated, if the symptoms demanded, until four fifths of the blood contained in the body had been taken away. Robert Jackson—called the Ulysses of Medicine—stated that when acting as surgeon-general of the British army, in 1813, he drew 80 or 90 ounces of blood at once in cases of fever in tropical climates, and in some instances ten pounds in a day. He stated also that the results of this apparently revolting practice were so favourable that the greater number of patients so treated returned to duty within a fortnight in the full vigor of health.

Thomas, in 1820, prescribed phlebotomy for a great variety of complaints and recommended, in the treatment of the nervous fever of infants, the withdrawal of as much blood as the child could bear.

Gregory, in 1830, declared that in pneumonia the danger of a large bleeding is less than the danger of the disease.

In the same year, Dewees, of the Pennsylvania University, after mentioning many diseases, including erysipelas, phlegmasia dolens, and bilious colic, which required venesection, added that the employment of this valuable remedy in the commencement of fevers is now so universal that it has almost become a domestic remedy, and the number of cases in which it is useful, nay, essential, is so great that we may look upon it as almost indispensable. And, he adds, that the prejudices

which were so long entertained against it have given place to a compliance which experience has showed it merited. The cases of fever, he continued, requiring the proscription of the lancet are so few as to constitute only rare exceptions.

C. J. B. Williams, only forty years ago, declared that almost all medical writers, ancient and modern, concur in their testimony as to the advantage of bloodletting in pneumonia, and he quoted Laennec, who depended on it less than most others, as saying that its employment had been proscribed only by a few theorists and medical heretics.

McIntosh asserted that he was persuaded, from past experience and from examinations after death, that much more mischief is done by bleeding too little than by bleeding too much. Delay, he contended, or insufficient use in an early period, throws the disease into a typhoid condition. And a repetition of the venesection even in the second and third stages of the disease is recommended, if pain and fever indicate its employment.

James Jackson showed by statistics that bloodletting shortened the duration of pneumonia by an average of two and a half days. He declared that the mere circumstance of age should not restrain us from the use of the lancet. For, he continued, Frank bled an octogenarian pneumonic patient nine times with happy effect.

Wood, of Philadelphia, taught, in 1855, that no disease bears the loss of blood—16 to 30 ounces at the first operation—better than open, well developed pneumonia. In typhoid pneumonia, he admitted that if pushed too far it is not unfrequently fatal.

But in typhoid fever, with sanguineous determination to the head, from 8 to 16 ounces of blood may be taken from the arm. In pharyngitis and gastritis, bleeding is commendable, and in enteritis the application of three or four dozen American leeches may be used with advantage.

* * * *

It is proper to notice here that this antiphlogistic treatment of pneumonia which had prevailed for centuries through-

out the civilised world and had been advocated by the highest medical authorities and subjected to the touchstone of experience, does not seem to have been such a brilliant success after all.

The mortality table of the Edinburgh Royal Infirmary for ten years showed that of 648 patients treated by venesection, 222—more than one third—died. This proportion of deaths to recoveries was about the same in La Charité and other hospitals in Paris, and in private practice throughout Europe and even in this country.

In 1847, in the hospitals of Vienna, under a treatment chiefly by diet and without bloodletting, the mortality was only one in thirteen.

The effect produced on the profession at large, by the publication of the Vienna and other similar statistics, was remarkable. Many physicians ceased to have recourse to the lancet except in extraordinary cases, and a few abandoned its use entirely.

The magnates, however, the professors, didactic and clinical, and the writers of books cherished a conservative incredulity. Some mocked; others said, we will watch and wait.

Previous to 1847 the medical profession had been held in the gyves of a so-called experience. And the leaders, the authorities, many of them, had become so habituated to the bonds that they felt no galling. And not a few resisted, if they did not resent, all attempts to unchain them. Invitations to investigate the claims of careful and competent observers were answered by the quotation, *Experientia docet*, and the question, Have not *we* been taught by the experience of ages?

Dear Thomas Watson, the eminent professor in King's college, and the fascinating writer, bore eloquent testimony, in 1847, to the efficacy of bloodletting in inflammation, claiming it to be the *summum remedium*. In pneumonia, he declared, reason and experience attest the remarkable power of phlebotomy. It cures the inflammation and relieves the

special function of the lung, and so kills two birds with one stone. The amount, he asserted, of the best *experience*, ancient and modern, is strongly in favour of its free and, I might almost say, its prodigal employment.

In his charming lectures, Watson adverted to the teaching of Louis, that venesection had not much control over the progress or event of pneumonia, merely to caution his hearers against being misled by it.

In 1865, John Hughes Bennett published in detail a record of all the cases of pneumonia—one hundred and twenty-five in number—treated by him during fifteen years in the University hospital of Edinburgh. This record shows that under a mild, supporting treatment, without venesection, the mortality was only one in forty, and in simple, uncomplicated cases, however severe, scarcely more than one in a hundred.

Yet after these and other favourable, but not so startling, statistics, some high authorities still clung to their faith in experience, forgetting that Hippocrates himself, in his first and immortal aphorism, admitted—asserted—that experience is fallacious.

Aitkin, the writer of two valuable and immense medical tomes, as late as 1866—thirty years ago—adhered to his published opinions and declared that there are cases which can be saved only by general bloodletting.

In the same year, however, our Flint avowed that experience and pathologic reasoning combine to show that bloodletting does not exert a direct controlling effect upon inflammatory disease.

* * * *

Tom Moore, you remember, asserted that

“Faith, fanatic faith, once wedded fast
To some dear falsehood, hugs it to the last.”

But the faith of the Watsons, the Woods, the Aitkins, and other giants was not fanatical. They had always confessed an orthodox belief in the existence of *vis medicatrix Naturae*, but they held also that faith without works is dead; and so, in their everyday practice, they fortified their faith—and the

vis—by vigorous sanguinary attacks on almost every disease.

They candidly admitted that venesection was not attended with invariable success, but, as they never appreciated nor imagined that the natural tendency of pneumonia is to a favourable termination, they not only regarded the remarkable crisis, which occurred in from five to eight days, as the result of the treatment but they pointed to it as a triumphant and irrefragable demonstration of the inestimable value of bloodletting. And they felt a proud satisfaction in assuming that the seventy-five out of one hundred who survived an attack of this dreadful disease, owed their escape to copious venesection, while the twenty-five who succumbed died in spite of it.

The truth is, these eminent men had never tested—never dared to test—any other form of treatment. They had walked so long in the good old road that their honest inertia could be overcome only by the “brute force,” as Virchow expresses it, of indisputable facts ascertained by repeated control experiments. These facts having been furnished and submitted to a successful cross-examination, the gyves of the venerated experience were broken, and the illustrious captives frankly abandoned their prejudice, sheathed their lancets, and led their disciples into the new and bloodless pathway.

* * * *

At that time it seemed almost probable that anyone, who thereafter should seek to inspire confidence in a theory or practice by an appeal to the testimony of experience, would first attempt to demonstrate that this experience is not an antiquated fetish but a credible witness, the offspring of broad, intelligent, unprejudiced investigation.

But men forget!

* * * *

A voluminous library would be required to contain the quotations which might be made from books, ancient and

modern, showing that a great multitude of wise and illustrious medical authorities and their faithful disciples, from the dawn of history, have regarded alcohol, if not a panacea, certainly an indispensable help in the management of many or most diseases.

And this unanimity of opinion and assurance of faith was founded on the inerrant testimony of Experience!

Indeed, the large majority of eminent medical authors and teachers still advocate the use of alcohol as the best of all stimulants, and appeal to their own clinical observations as ample justification of their practice.

The less eminent members of the profession, the compilers of books, and the busy practitioners simply follow their leaders, without investigation and without question.

An author of great prominence advises the use of alcohol in typhoid fever from the onset, to those who are accustomed to its use.

Cardiac asthenia, he says, is an indication not only for alcohol, but for strychnia, caffeine, nitroglycerin, etc.

Strychnia is employed at the Gold Cures as an antidote for whiskey, and it seems judicious, if a poison must be employed, to combine it with its opponent. And this author considerably charges physicians to remember that every dram of alcohol above what is actually demanded is harmful.

Similar advice is given by one who has been long at the head of the profession, and his counsel is to avoid the administration of alcohol to young, healthy, temperate subjects when it is not absolutely demanded, both because it may irritate and because it may tend to establish a habit.

But this wise and humane admonition is followed immediately by the statement that, in the majority of cases, alcohol is required either as a food or a substitute for food, and to aid in maintaining the circulation.

In a late edition of his work on "Therapeutics," an American author, of world-wide reputation and abundant hospital opportunities, asserts that the vapour of alcohol produces anaesthesia, as ether does, and that this effect may be deep-

ened into death. He is reported to have expressed his opinion, at a recent international discussion of anaesthetics, that the deaths in many cases of chloroform anaesthesia were hastened, if not caused, by hypodermic injections of alcohol to relieve heart failure.

He relates experiments, too, which seem to show that while alcohol increases the rapidity of ventricular contraction, it gives no increase of arterial pressure, and shortens the period of heart rest. He quotes the experiments of his friend Martin, which show that while blood containing $\frac{1}{8}$ per cent.—one part in 800—of alcohol had no immediate action on the isolated heart, $\frac{1}{4}$ per cent. diminished heart work in less than a minute, and $\frac{1}{2}$ per cent. nearly destroyed it.

But our author thinks experimental evidence of this kind should not be put against the universal belief of clinicians that small doses of alcohol *do* act upon the heart directly and increase the force of the circulation. He admits, however, that it may be considered as established that overdoses of alcohol directly depress and paralyse the heart.

He holds to the belief that alcohol in small quantities is an arterial and cerebral stimulant; that it is a food because a portion of it is retained in the system, and because it retards tissue change.

So that an article which confessedly is an anaesthetic, like ether, which diminishes heart work materially, and which, even in small quantities, retards digestion, is nevertheless a stimulant and a proper food to impart power to the system and bridge over periods of weakness!

Our author enumerates a variety of diseases and temporary disorders in which alcohol, especially with stimulants like ammonia, should be employed. Fainting, debility, chronic diseases, dyspepsia,—where, he assures us, alcohol aids in the assimilation of food—and in poisoning, where from failure of heart power death is threatened, alcohol is required.

In desperate poison cases, “four to six ounces of whiskey should be given every ten or fifteen minutes”—that is, a

gill to a pint and a half every hour—"until intoxication, convalescence, or death ensue." In snake bites, a pint of whiskey may be given in an hour.

As a fitting conclusion, this author says that the habitual use of moderate amounts of alcohol as a beverage does no harm. It seems quite likely that he would not favour the legislative enactments which, in New York and other states, require the instructors in all the public schools to teach the pupils thoroughly that the use of alcoholic beverages is unsafe, harmful, and dangerous.

Regarding the action of alcohol, and its value in the treatment of disease, a great diversity of opinion exists in the profession. Many eminent physicians,—and the number seems to be increasing here and abroad—from careful study and experiment, and from a prolonged disuse of the drug as a beverage or a medicine, have arrived at the conclusion that alcohol is a depressant rather than a stimulant; that it is not a food; that its power to check the normal metabolism of tissues and delay the excretion of effete products from the system is not a benefit; that it does not promote digestion, but retards it; that it is the cause of many diseased conditions; that the substitution of other drugs, in cases where alcohol is claimed to be beneficial, is productive of better results; and that there can be no reasonable doubt that the daily use of alcohol by members of a community, as a beverage or as a remedy, with all its possible and actual evils, is in many instances the outcome of the well-intended prescriptions of the family doctors.

At the Anti-alcoholic Congress, held in Brussels, in September last, under the presidency of the minister of state, eminent medical men took part in the proceedings. Dr. DeBoeck related experiments on students which went to show that alcohol, even in small quantities, tends to paralyse the higher cerebral centres. Dr. Whyte of Manchester gave statistics from Rechabite societies, showing the greater longevity of total abstainers. Dr. Fovel of Zurich, and other physicians, insisted on total abstinence as the only cure for

alcoholism, and said that doctors should not only preach, but practise, abstinence.

Concerning the employment of alcohol in medicine, the congress took no action.

* * * *

When we examine the dreadful mortality tables which have been thrust upon our attention in the last three or four years, we do not discover that the employment of alcohol has resulted favourably enough to dispel all doubts and silence all criticism.

Keating gives a graphic account of the treatment of four children, aged from four to five years, in the New York Foundling Hospital. A moderate amount of whiskey did no good to these unfortunate sufferers from diphtheria, so the Bourbon was increased to a teaspoonful every twenty or thirty minutes, day and night,—twelve ounces in twenty-four hours. Nevertheless, all the children died.

On the Continent of Europe the use of alcohol in diphtheria had been almost universal, from its appearance in 1845, for fifty years. Niemeyer, the best medical philosopher of the age, gave it chiefly in the form of the stronger wines. Oertel commended it, and it was used in all the hospitals. The deaths were from fifty to sixty-eight in every hundred cases. Under the use of antitoxin the mortality diminished to 25 per cent., the alcohol, presumably, being still employed, for one daring doctor announced that *he* cured a bad case with antitoxin without the aid of a single drop of alcohol.

In the practice of many physicians in this country who used 4 per cent. Rhine wines instead of whiskey or brandy, because these strong drinks usually caused nausea and vomiting, the high European mortality was unknown. And now, both at home and abroad, under the early employment of antitoxin, with a total disuse of alcohol, the mortality is practically *nil*.

* * * *

We have seen that the fallacious experience regarding the

utility of bloodletting was exposed and overthrown by the stern logic of facts. Is it not possible that the experience—the boasted experience of ages—respecting the nature of alcohol, its food value, and its efficacy in the treatment of disease, may contain some fallacious elements?

Is not this one-sided, incomplete experience in most instances but a blind following of an unverified tradition? For, how many of the learned and brilliant possessors of this experience have suspended prejudice, examined the arguments and testimony of the abstainers, and practically tested the non-alcoholic treatment of disease?

Now, if it should turn out that the use of alcohol, besides being hasardous, is always unnecessary—such cardiac, cerebral, and other stimulants as strychnine, strophanthus, digitalis, ammonia, caffenin, and nitro-glycerine being able to fulfill all demands for which alcohol has been administered—what a load of responsibility will rest upon the text-books, the very latest of which inculcate with increased vehemence, a doctrine which may do immeasurable personal injury to the great host of medical graduates sent out every year, and to the trusting communities which expect and deserve from their medical attendants wise benefactions unmingled with baneful ingredients!

I have in my possession the names of many eminent advocates of total abstinence from intoxicating drinks and of their close restriction or total avoidance as medicines. Among these are Benjamin Rush, John Bell, N. S. Davis, Reuben Mussey, Willard Parker, A. B. Palmer, J. H. Kellogg, D. F. Crothers, I. N. Quimby, Sir Benjamin Richardson, John Rawling, Norman Kerr, Fovel, Struempel, Hirschfield, Binns, and Legrain.

The character and scientific standing of these and many others who have had the double experience—the use and the control *non-use*—should suggest the impropriety as well as futility of all attempts to overpower or silence such men by calling them cranks or fanatics.

History sometimes repeats itself; and the fate of blood-letting experience should be remembered!

Some future Madame Roland may yet be led to exclaim:

O Experience! What mistakes have been committed in thy name!

* * * *

Preventive medicine has been called the medicine of the future. But it is of special interest now. Curative medicine—prescribing for existing ailments—is what demands primary attention. In the choice of remedies, the wise and conscientious physician considers not simply the present, but the future, well-being of his patients, and avoids if possible those remedies whose ulterior effect may be injurious.

In addition to this curative treatment, the physician has abundant opportunities to point out those deleterious practices and habits which injure the health, undermine the constitution, and jeopard life itself. And he would not be worthy to belong to a philanthropic profession if he did not improve these opportunities and give appropriate and earnest counsel.

Government statistics show that the enormous amount of seven hundred millions of dollars is annually expended in the United States for alcoholic beverages. Careful estimates reveal the appalling fact that seven hundred millions more are required to supply the destitution and punish the crimes, the direct outcome of these drinks.

The suffering, from diseases induced or aggravated by the use of alcohol as a beverage or as a remedy, prescribed by victims themselves or by the medical attendants, cannot be measured by mathematical calculation.

The daily press is filled with accounts of maiming, manglings, and murders committed by men under the influence of alcoholic stimulants.

* * * *

Long antecedent to the advent of Hippocrates, a worthy patriarch disgraced himself and brought shame to his family by indulging in the purely domestic fermented fruit of a vine which he had planted.

Since that period, what an innumerable multitude, from a similar indulgence, have suffered the same disgrace! Here experience expends its teaching on the innocent families but has no effect on the authors of the misery.

The amount of sorrow and shame, of agony and despair, of vicious and degrading examples, of crime and brutality, existing in wretched hovels and in more pretentious dwellings, all caused by alcohol, is known only to God himself.

Philanthropic men and women, in this country and abroad, have been toiling for many years to lessen and destroy the debasing drink habit. Their efforts of late have been attended with encouraging results.

Prominent men in Europe are giving their valuable aid and support.

More and more members of the medical profession in America are breaking the gyves of a deceptive experience. They will no longer remain trigs in the way of the beneficent attempts to overcome the hideous evil which through all the ages has cursed mankind.

If the medical journals of the country, instead of advertising and commending medicated wines, intoxicating malt extracts, and well-aged whiskeys, would intimate that the non-alcoholic treatment of diseases deserves a fair trial, and if their readers would personally test this treatment, no harm, but an immense amount of good, might be the outcome.

And can there be a reasonable doubt that if but 500 of the most prominent leaders and teachers of the profession in America—if but fifty of the authors of medical text-books—would by earnest precept and faithful example oppose the use of alcohol in all forms as a beverage or medicine, the remainder of the 100,000 doctors might be influenced to follow this teaching and worthy practice, and thus give a noble and lasting impetus to the greatest philanthropic enterprise in the world?

A NEW FORM OF INTRA-OCULAR IRIS SCISSORS, AND THEIR APPLICATION IN INTRA-OCULAR SURGERY.

By HENRY W. WANDLESS, M. D., of Dallas, Texas.

Read by title, October 14, 1897.

These new scissors are the outcome of several unsuccessful attempts to relieve an iris which had prolapsed into an opening in the cornea, the result of an injury. This accident is quite frequent, and, so far as I know, there has never been devised an instrument which has proven a success for its relief. This instrument is designed to operate upon prolapsed irides, anterior and posterior synechiae, and secondary cataracts, also for performing capsulotomy and discission.



Dr. Wandless' Intra-ocular Iris Scissors.

After a number of experiments, and with the valuable assistance of George Tiemann & Co., I have to submit to the profession an instrument which is very new, novel, and what is better still, a success.

I have been extremely gratified with the results so far obtained with this new instrument; so much so, indeed, that I feel confident that the majority of cases of this character may now be successfully operated upon. I am satisfied that

every oculist has had cases of prolapsed irides which baffled his skill and which he finally abandoned for the want of a suitable instrument with which to operate.

An instrument designed for intra-ocular surgery should meet certain essential requirements. I refer especially to its mechanical construction, as follows :

1. It should be very delicately constructed.
2. It should have sufficient strength to cut the iris and cicatricial tissue.
3. The blades must pass through the substance of the cornea without a hitch.
4. The blades must cut on both their inside and outside, the instrument having four cutting edges.
5. The joint must be so perfect in fit and adjustment as to prevent the escape of fluid from the anterior chamber during the operation.
6. The movements of the blades should be within the anterior chamber.
7. The handles should be so designed that the fingers may have the freest and most natural movement.
8. The blades, when closed, must be spear-shaped, cutting from point to heel in passing the cornea, and from heel to point when severing the attachments.

These requirements have been anticipated and, I think, very nearly met.

As regards the delicacy of the scissors, it does not seem possible to make it greater without sacrificing their utility.

The longer blade is about an eighth of an inch long, and the other one shorter, and about one sixteenth of an inch wide at the heel. It is made upon the alligator-jaw fashion, one blade only being movable, which is hinged to the shank and its fellow by two very delicate rivets.

The strength of the scissors is remarkable, and is obtained by a sort of mortise-and-tenon joint, forming a shoulder where the blades fit into the shank. In this way very little strain is thrown upon either rivet, the force being applied directly against the shoulder. The hinged blade is a little shorter

than its fellow and fits so closely to it that when the longer blade passes through the cornea, it follows it closely and smoothly. The outside cutting edge of the scissors merges into a thin, non-cutting edge after passing the heel, so that the wound in the cornea can not be made larger as the scissors are manipulated.

If the fluid in the anterior chamber escapes before the operation is begun, the chamber collapses immediately and further procedure is impracticable, for it would be exceedingly hazardous to manipulate a sharp-pointed instrument of this character under such circumstances, having the delicate lens capsule against it on one side and the cornea on the other. It is very essential then to *prevent* the escape of fluid, and these scissors do it effectively.

The blades must be sharp far enough back to pass them beyond the heel before it is necessary to open them; otherwise they will become bound in the wound and their action will be limited.

An attempt to open the blades while they are passing the cornea enlarges the wound, and when the heel is passing beyond this point the fluid escapes, as the shank does not fill the enlarged corneal incision.

The handles are curved at an angle to the shank of about twenty degrees, which seems to admit of the most natural position of the fingers and wrist, so that the instrument can be more easily manipulated and the cornea be penetrated at any point offering the best advantage. By a sort of leverage at the handle joint one half of the shank is pushed towards the point of the scissors (the other remaining stationary), and, as it does so, the blade is carried before it and is closed. The reverse action opens it.

Two rings are placed, one upon either handle, in which the thumb or finger is inserted to open or close them. By a set-screw these rings are adjusted on the handle to suit the operator.

A set- or top-screw (which is very important) is also placed between the handles, which provides for perfect adjustment

of the points of the blades, prevents undue force, when applied to the handles, either breaking or damaging the instrument.

The scissors may be used with the handles up or down, as it is most convenient for the operator.

Technique of the operation:—Prepare the eye for the operation as you would for iridectomy or cataract extraction; sterilise the scissors by placing them in boiling distilled water, having previously immersed the blades in olive oil, which prevents the water from rusting the points. As a precaution I will mention that bichloride-of-mercury solution placed in the eye is apt to injure the instrument.

Having decided upon the point of attack, the eye is held with a fixation forceps in the left hand and the intra-ocular iris scissors are held in the right hand, as much as possible of the conjunctiva with its subjacent tissue being taken up in the bite of the forceps. I will add here that the eye is much more easily controlled when a great amount of the conjunctiva is included within the forceps' grasp than when only a small portion is held; as the membrane is very elastic, a small portion acts as a loose pedicle and does not give good support to the eyeball, and any force not directed squarely against this pedicle turns the eye in whatever direction the force is applied, taking, of course, into consideration the support afforded by the ocular muscles, the optic nerve, etc. When a great amount of the membrane is included in the bite of the forceps, it acts as a band around a marble the two ends of which are held firmly between the thumb and fingers, binding the body in its entire circumference; in other words, it puts the conjunctiva on the stretch entirely around the globe, by which, together with the support afforded by the ocular muscles, nerves, fascia, etc., the eye can be held very steady and securely.

The point of the scissors is inserted through the cornea, close to but not in the sclero-corneal junction, as the scissors pass more easily through corneal tissue. In this step, the point of the instrument is entered and carried across the chamber exactly as a cataract knife is for cataract extrac-

tion; then by separating the handles, the blades are opened and pushed forward, the endeavour being to complete the operation by one snip of the scissors.

The blades are then closed and the instrument is withdrawn very carefully, to prevent a rush of aqueous, carrying with it a portion of the iris, rendering the latter state of the patient as bad as the first, if not worse. If the operation is not completed, and further procedure is impracticable on account of hæmorrhage or loss of fluid, it should be deferred for another sitting. The eye is bandaged, and treated as in other intra-ocular operations. After the first twenty-four hours, there is little danger of prolapse, and at that time the eye may be inspected and the bandage re-applied, to remain forty-eight hours, when it may be removed entirely. It is advisable always to instil a solution of atropine, to prevent posterior and possibly anterior synechia.

If the portion of the iris thus excised has no sustenance by its connection with the cornea, it will disintegrate and be absorbed by the fluids of the anterior chamber.

The operation here described is for an uncomplicated case of prolapsus iridis. There are cases, however, which require certain modifications of the technique on account of various complications and conditions, which must be recognised before the operation is begun. We often find that a central corneal opacity complicates a prolapsus or adhesion, which may occur in any puncture or ulcer of the cornea, and, if it can be properly operated upon, allows the iris to retract and form an artificial pupil at the side of the opacity. This result is very much better than that of iridectomy, because the continuity of the circular fibres of the iris at its ciliary margin has not been broken, and its functional activity is but very slightly disturbed. From an iridectomy, such a happy result would not be expected; on the contrary, one would have a key-stone shaped opening in the iris embracing its full radius, and the natural pupillary contractions and dilatations would be seriously impaired.

In operating with these scissors, for the double purpose of

making an artificial pupil and at the same time relieving the incarceration or adhesion, the operator must exercise considerable judgment in determining the direction of his incision; that is to say, whether the scissors should be introduced into the anterior chamber on the same side of the cornea as the adhesion (first position), or on the opposite side (second position), or on a line parallel with the edge of the adherent iris (third position). These different positions have something to do with the size and shape of the opening made in the iris. If the scissors are introduced on the same side as the adherent iris, the opening is made oval, and presents an appearance much more sightly than when considerable of the pupillary margin is removed. The artificial pupil thus made embraces more of the radius of the iris than when either of the other positions is employed; the iris, having been pushed somewhat forward before the scissors, is put on the stretch, and, when freed, retracts considerably.

In the second position, the scissors are inserted on the opposite side of the cornea from the adherent portion, and when they grasp the iris it is not put on the stretch, as in the first position, for the scissors engage that portion which corresponds to the pupillary edge, and it can only slightly recede, as the force is applied against the incarceration. When the cut has been completed, it is found that the external margin of the opening does not extend so near the ciliary margin; so, if the corneal opacity is at all extensive, the position offering the most useful pupillary exposure should be selected for the operation. If the scissors are introduced on a line parallel with the adherent iris and corresponding with the pupil's margin, the section taken from the iris has its long diameter on the same line.

The third position is useful when the adherent band is too broad to be taken within the grasp of the blades. If the opacity is small, an extensive opening is not desirable.

It is thus seen that an artificial pupil may be made at the same time that the iris is released; and in every case the pupil is made larger or smaller, as the section is made away

from or close to the posterior corneal surface. When there is no opacity, it is important to have the artificial pupil as nearly of the size of its fellow as possible, that they may act in harmony, as well as for the sake of personal appearance.

It should be remembered that it is important to sever all the fibres at one snip of the scissors, as haemorrhage follows immediately. This greatly interferes with further procedure, and often renders it impossible. If the adherent portion is extensive and completely severed at one cut, it is crowded within the narrow limits of the delicate blades and put on the stretch; the opening when made is necessarily large.

The description so far has been confined to cases of anterior synechiae and prolapses of the margin of the iris. Those prolapses and adhesions which occur at various distances from the pupil's margin, and are not complicated by a corneal opacity, require very close attention, for the reason that it is important to make a small opening in the iris on account of its interference with the natural pupil. In fact, it is a question whether any advantage is gained by an operation, especially if the prolapse is small. A corneal opacity over the opening in the iris at this point might be of advantage. If the operation is advisable, the section should be made very near the posterior surface of the cornea, in order to secure the least amount of retraction. A solution of atropine or eserine should always be used before operating, for diagnostic purposes, and to draw upon the iritic attachment. Cocaine is too feeble in action to produce this effect, and the one to be used will depend upon the location of the adhesion. This is also true in marginal adhesions and prolapses. This being done, we are able to study the attachment and the best mode of attacking it. We are also able to detect complications, such as posterior synechiae, opacity of the lens capsule, and incipient cataract, and are better able to judge of the advisability of an operation.

I do not adhere closely to technical distinctions between the different conditions, whether the result of corneal ulcers,

wounds of the cornea, or other causes, for the same general rules for operating are applicable to all.

I now wish to call attention to the operation upon posterior synechiae, which requires extremely delicate manipulation, for the reason that injury to the lens or capsule is fraught at times with very disastrous results; a puncture of the capsule causes traumatic cataract and absorption of the lens substance, while panophthalmitis is not improbable. In the first place, the scissors should always be introduced so that the movable blade moves away from the lens when the blades diverge. Dilate the pupil with a solution of homatropine or atropine, and anaesthetise thoroughly with a solution of cocaine, 12 or 15 per cent., which draws the non-adherent iris away from the lens while the adherent portion is put on the stretch and is recognised as a band of fibres radiating across the lens.

It is observed in most cases, where the band is not too wide, that a little space exists between this band and the lens capsule, on account of the convexity of the lens. When the scissors are introduced into the anterior chamber, open the blades carefully and pass the stationary blade behind the iritic adhesion; then with one snip of the blades the adhesion may be severed. If the band is too broad and cannot be included in the grasp of the scissors at one time, haemorrhage will render further procedure impossible or extremely difficult, and the completion of the operation must be deferred for another sitting. If the adhesion includes the entire pupillary margin, this operation cannot be done, and all that can be accomplished is to establish communication between the posterior and anterior chambers, which is done at some risk to the lens.

In the treatment of secondary cataract, I have had only one opportunity to test the scissors with an excellent result, and I feel certain of their future. It is difficult to penetrate an opaque capsule, because of its having lost its brittle character. The cut should be made across the capsule, which curls upon itself and opens the incision sufficiently to give

considerable vision. Sometimes adhesions take place between the iris and the retracting capsule, by which the former is drawn entirely across the anterior chamber; an incision should be made in the iris across its radial fibres. Retraction and contraction of its fibres then take place on either side of the incision, and so a very serviceable pupil may be formed.

The operation of capsulotomy and discission does not need special mention here, as the same general rules and precautions which are necessary for other intraocular operations apply equally to them.

The surgeon should use good judgment in the selection of his cases and in the use of this instrument, and not attempt to use it in an inappropriate case. I have had but three operations with these new scissors, two of which were entirely successful, as well as satisfactory; the other was complicated, which made a perfectly satisfactory result impossible.

The report of these cases, with others I expect to have, will be the subject of a subsequent paper.

A NEW CONSTANT-CURRENT EAR SYRINGE, OR INJECTOR.

By HENRY W. WANDLESS, M. D., of Dallas, Tex.

Read by title, October 14, 1897.

In my practice, I have been greatly annoyed by the inefficiency of the ordinary ear syringes. They are seldom in order, and the valves or pistons afford a very convenient foothold for bacteria and other septic matter. The current thrown with them cannot be accurately landed or its force guarded.

If the piston is hard to start, it often goes suddenly and with considerable force, sometimes causing the patient great pain. The fluid used must be kept in an open vessel, and the syringe reloaded for each injection. The fluid gradually cools, often below the desired temperature, without the knowledge of the operator, unless advised by the patient.

The quantity of fluid used is necessarily large. The nozzle of the syringe must rest in the external meatus, and if there is much swelling, this is very inconvenient and sometimes impossible. The temperature of the fluid is usually determined by putting the end of the finger into it, which is neither clean nor accurate. My first recollection of this operation was seeing the same bowl used for both a drip cup and for holding the fluid injection, resyringing the same fluid over-and-over again, which seems to me a dangerous practice,—the danger being to the next patient.

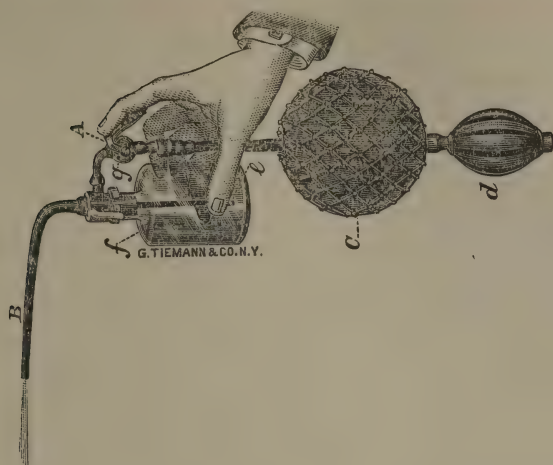
Some of the advantages of this new constant-current syringe, or injector, are given as follows:

1. It has no piston to get out of order.
2. It may be operated with a rubber receiver and hand inflation bag, or from a compressed air tank.
3. The quantity of fluid necessary is small.
4. The force of the current may be regulated precisely.
5. The jet may be landed on any particular part of the tympanum, or in the external canal.
6. The stream thrown is small, and the outflow does not interfere with the inflow.
7. The temperature of the fluid may always be known, as the bottle containing it is held in the hand.
8. The flow is continuous until the solution is exhausted, or is cut off by the operator.
9. It is clean and practically aseptic.
10. It is convenient and always in order.
11. The current may be started suddenly or gradually, and discontinued the same way.
12. The air pressure is completely under the control of the operator, by means of the new instantaneous cut-off.
13. It is not necessary to place the tip in the external meatus in order to insure accurate landing of the stream; in fact, it is used more satisfactorily held an inch or so from the ear.
14. The solution retains its temperature longer, being in a tightly-corked vessel.

The apparatus is composed of a bottle (*f*) for holding the fluid, a hard-rubber stem (*e*) for conveying the fluid out of the bottle, a tip (*B*), a soft-rubber receiver (*c*), inflation bag (*d*), the author's new instantaneous cut-off (*A*), and an opening for the instantaneous escape of air from the bottle when it is cut off (*g*).

The bottle is made to stand about thirty pounds pressure to the square inch, and the rubber receiver, about fifteen pounds to the square inch; the latter is about all one can overcome by hand.

The instantaneous cut-off need not be described here; suffice it to say that the current of air is instantaneously cut off



and at the same time the air pressure in the bottle is released, stopping the entire operation instantly.

The apparatus is operated upon the plan of an ordinary spray or atomiser. Persons who have an air tank may dispense with the soft-rubber receiver and inflation bag, and attach the instrument directly to the air tank.

To operate the instrument, the receiver is first filled with air, which requires a few compressions of the hand-inflation bag, and is stored to be used as occasion requires.

The cut-off is then attached to the thimble, and the bottle is held in the right hand between the thumb, second, third, and fourth fingers, while the index finger operates the lever or trigger of the cut-off. The current is turned by depressing the lever and is cut off by releasing it, the left hand being free to manipulate the external ear. In using the instrument attached to an air tank, the *modus operandi* is the same as stated above, except as to the source of the air pressure. The air being turned on by means of the cut-off, it passes directly into the bottle, forcing the fluid up through stem (e), and finally through (B). No air can escape until all the fluid is driven before it.

I was particularly pleased when I observed the small

amount of air necessary to operate it. To use a given quantity of solution requires a like volume of compressed air, uninterrupted; an interrupted current requires somewhat more.

The full force should not be turned on at first, as it startles the patient and sometimes gives him considerable pain; besides the danger of injury and shock to the tympanum is considerable.

Pulling the external ear up and out generally throws the drum head in plain view of the operator. After discontinuing the stream, the drum is hidden by some of the solution remaining in the canal, which is released by lowering the ear. A speculum may be used, and the stream thrown through it, which often is quite an advantage.

The patient unconsciously assumes with his head the position suggested to him by the manipulations of the ear. The interruptions in the current may be as frequent as desired, being entirely under the control of the operator.

In removing impacted cerumen from any part of the external canal, it is exceedingly efficient.

One may play upon the impaction with the greatest accuracy, and it may be undermined and dislodged easily.

For removing purulent and other discharges from the ear, it has given me the greatest satisfaction.

The tubes should always be cleared of any of the solution before it is put away; especially is this necessary after using a solution of salts. These solutions sometimes dry in the end of the tube, and block it; a wire passed through the end tip is sufficient to remove this.

A solution for this purpose, and one which I have found generally satisfactory, is that made from an alkaline antiseptic tablet, the formula of which I recently published in the *Journal of the American Medical Association*. The strength of the solution is one tablet dissolved in from one to four ounces of boiling water. A convenient way is to keep the solution made up full strength, one tablet to the ounce of water, and dilute, when necessary, with water or a solution of boric acid.

The pleasure which I have experienced in the use of this instrument is not, I am sure, due to the interest I would naturally have in my own device, for I have used it sufficiently to have abandoned it were it not a superior instrument, in my judgment.

ELEPHANTIASIS OF THE VULVA.

By WILLIAM FINDER, JR., M. D., of Rensselaer County.

Read by title, October 14, 1897.

Elephantiasis affecting the external genital organs, while rare, is next in frequency to that of the leg and foot.

The first case of vulva elephantiasis, clearly described, was observed by Saucerotte in 1776. Many cases have been observed in tropical countries, and in states bordering such countries, but in our cold climate it is somewhat rare. The disease may occupy the entire vulva, or may be limited to a particular part, as, for example, the clitoris. It may arise from both labia, or from either one, without other parts being affected.

The disease usually begins in an early part of life. Myer's statistics (which include thirty-seven cases), show that the disease began in eighteen of them during the period between twenty and thirty years of age.

Elephantiasis of the vulva usually appears in the form of a broad-based tumor, but sometimes is pedunculated. These tumors frequently grow to enormous sizes, and have been found to weigh between twenty and thirty pounds; in fact, in tropical countries, some have reached to the feet of the sufferers. There is a temporary increase in size during menstruation and pregnancy. In some cases, the origin may be traced to an injury; in others, it has been attributed to the irritation of eczema, erysipelas, or syphilis. The skin is greatly thickened. The lymph spaces and lymph vessels, as well as all other vessels, are greatly enlarged and dilated.

These growths are frequently confounded with condylomata, and, in their early beginning, with lupus, but the condition is easily distinguished from the latter even when the



FIG. 1.—Elephantiasis of Vulva.



FIG. 2.—After operation.

ulceration has been excessive and deep, by the rapidity with which healing takes place, oftentimes spontaneously, while those of lupus are deep and progressive. The changes in the tissues beneath the tumor readily enable one to distinguish them from condylomata.

All authorities agree that medical treatment is without avail, and the only remedy is extirpation of these masses, which is usually effected by using ligatures, or by the aid of knife and scissors, and frequently the thermo- or galvano-cautery, the ecraseur, and the elastic ligature. If the tumor be removed by knife, bleeding vessels should be tied immediately, or forceps employed, for the haemorrhage is sometimes tremendous.

There is a possibility of a return of these growths, but rarely. In forty cases analysed by Cellard, there was but one recurrence.

This condition of elephantiasis of the vulva is frequently confounded with fibromata, or solid tumors, or it may be a mixture of fibrous and muscular substance.

Miss G., age twenty; born at Bolton, Lake George, N. Y.; mother dead; father living, also a number of brothers. Acknowledged, and gives distinct proof of having had syphilis, evidences of which are markedly present.

She stated that she received an injury, some four years ago, on the vulva, from which ensued the growth, which I will present to you, as well as a picture of this growth on her body.

Miss G. entered the Troy hospital, June 8, 1897, but, as she was menstruating, it was necessary to wait a number of days, so I delayed until Friday, June 11, at 3:30 p. m., when the usual operation for cases of this kind was done, with the result before you,—fairly well illustrated by the art of photography.

The removal of the growth proved to be somewhat tedious, because of the greatly-enlarged vessels, and the haemorrhage was abundant; but, as she had been thoroughly infected with syphilis, I thought it would be well to permit a thorough flow, but found it finally necessary to ligate a large number of vessels, and proceeded cautiously to sever the growth.

The history of her recovery has been uneventful, temperature only once rising to $101\frac{1}{2}^{\circ}$ F.; otherwise normal. Wound has

healed very nicely, nearly through its entire length, by first intention. There has been hardly any discharge. She has returned to her home, well satisfied with the result.

If I should do another operation of this kind, I would follow the plan of Schroeder; that is, to begin cutting at the lower portion of the growth, and stitching as I went along; which, I think, would give a great deal better result, save much time, and prevent the loss of blood.

This growth involved the entire labia majora, arising, apparently, from the one, going up to the mons veneris, and down the other.

Histological considerations.—The growth is made up of fibrous tissue, having within its area quite a few glandular structures, and is composed, as are all such growths, of greatly-thickened skin. Abundant proliferation of its constituents is present, while the lymph spaces and vessels are very much dilated.

FARADISM IN THE TREATMENT OF INERTIA OF THE UTERUS.

By WILLIAM H. ROBB, M. D., of Montgomery County.

Read by title, October 14, 1897.

In the practice of medicine, one meets with all classes of people. In that department of medicine which pertains to obstetrics, one finds many different classes of women,—women differing in physical and mental peculiarities. The phlegmatic and melancholic, as well as the nervous and hysterical, come under observation. Each one, as a patient, demands special consideration. No two are affected exactly alike, either by disease or by remedies. Each one has in herself, either in constitution or temperament, an individuality. This modifies, more or less, every physiological function, and every pathological change is influenced by it.

Labour should be, and when normal is, a physiological process. It becomes pathological when it deviates in any way from the normal type. With the phenomena of labour in its different stages you are all familiar. During labour, any deviation from the normal type will attract our attention, and as the signs and symptoms of labour differ from the normal type, so our anxiety over our patient increases. If the pains become weak and abnormally slow, we fear that a condition of exhaustion is approaching. This condition may surprise us at any moment; it may occur during either stage of labour. If promptly treated by suitable remedies, it may be of temporary duration and of little significance.

In a few cases, we will find that our patient's condition does not improve by the prompt use of the most suitable remedies, and, in fact, seems to grow worse. Her pains con-

tinue less efficient and less frequent until they entirely cease. A condition of inertia has supervened. According to Webster, "Inertia of the uterus is said to occur when in labour its contractions have nearly or wholly ceased." Inertia of the womb may occur during either the first, second, or third stage of labour, or after its completion. It is a serious complication. In the first and second stages, it endangers the lives of both mother and child; during the third stage and after the completion of labour, the mother's life only.

With the symptoms of inertia you are all familiar, many of you having had one or more of these cases to treat. In one, the symptoms may appear suddenly and without warning; in another, slowly and imperceptibly. The treatment indicated varies, as the inertia appears in one or the other stage of labour. Many remedies have been used to prevent and combat this condition. I will enumerate a few only of those that I have found valuable:

The removal of obnoxious persons from the lying-in apartments; an encouraging word to the patient; hot drinks,—milk, tea, coffee, beef-tea, broths, and sling; ergot, strychnia, quinia, brandy, whiskey, morphia, chloral, chloroform; friction to the fundus of the uterus, forceps, intra-uterine injection of hot water, hot carbolised water, vinegar, and comp. tr. of iodin.

When indicated, I would advise the use of brandy, strychnia, and ergot hypodermatically, for I have time and again been disappointed in obtaining any results from their internal administration. I have frequently seen large quantities of alcoholic stimulants thrown out of the stomach as soon as the patient had recovered sufficient strength to expel them. The exhaustion is so profound in these cases that the power of absorption by the stomach seems suspended. I repeat, when indicated, always *give them remedies hypodermatically*.

With each and all of the remedies you are familiar. You have used them singly or combined, as the condition of the patient demanded. You will recall many cases in which

you have obtained the most gratifying results by their use. We all depend upon them. They are invaluable, and are in daily use. While in great demand and so valuable, I am sorry to say that their use in my hands has sometimes been disappointing. I have not obtained the desired results. The patient did not respond to their use. Singly, or combined, their use has occasionally been unsatisfactory. They have failed in meeting the demands asked of them. We are thus driven to seek better remedies.

It is for this reason that I now ask your attention to the use of faradism in the treatment of inertia of the womb. Little has been written on this subject. From works in my own library I could learn nothing. The writer's experience with it began in 1880, and has been universally satisfactory. Personal use of this agent, in private as well as in consultation practice, has repeatedly demonstrated the efficacy of this remedy. Its application is usually soothing to the patient. The strength of the current is regulated somewhat by the condition of the patient, and her ability to bear it without suffering. It has rarely been given of such a strength as to cause the least distress; never for more than a few moments at the beginning. Strong currents have not seemed to be needed. Its effect on the uterus can be watched in two ways: by the application of the hand to the fundus, or by the introduction of the hand into the cavity of the uterus. By either means, we can note positively whether the uterus is contracting or not, and when it becomes normally contracted.

In mild cases of inertia, the use of the battery is required for a few moments only, after which the uterus remains in a normal condition. In a few cases, I have found it necessary to continue its use for a much longer time; in one case, for twenty-four; in a second, forty-eight; and in a third case, for seventy-two hours. This was the earliest moment at which it seemed safe to remove the battery. At any time earlier than this, if the battery was stopped, the uterus would relax, and haemorrhage recur. I think it wise to con-

tinue the use of electricity until the uterus *remains firmly* contracted.

It neither disturbs nor excites the patient. It never interferes with sleep. Its effect on the patient is not confined to the uterus alone. In addition to stimulating uterine contraction, it has a powerfully stimulating effect on her nervous system. This is particularly noticeable in those cases where the inertia comes on during or after the third stage of labour, and is accompanied with profuse flooding. This is a desperate condition. The woman is alarmed at once, and becomes worried and anxious. A condition of exhaustion and despair follow, and if efficient means are not at hand, death soon supervenes.

In these cases, we observe the most marvellous results obtained by the use of faradism. I say marvellous, because of its being *instantaneous*. As soon as both poles of the battery, through suitable electrodes, are properly applied to the woman's body, and the faradic current driven through the walls of the uterus, its muscular fibres begin to contract, its open vessels are closed, the haemorrhage is checked, and the life of the woman saved. From this moment her condition improves. Her expression becomes less anxious, her face and mouth less pinched, her eyes less sunken, and her whole face less blanched. Her respirations become more regular, lose their gasping character, and become full and deep. Her pulse becomes less frequent, and slowly recovers a little tone. The surface of the body and the extremities of the patient slowly recover their normal warmth. She is now in a condition of safety. With proper medication, and careful nursing, she is in a fair way to recovery.

Faradism should be used *with*, and not to the exclusion of, other remedies. Its use is to *supplement and aid*, not to supplant, their use. Its use in my hands has always followed that of one or more of the remedies already alluded to. It not only prevents the immediate dangers of inertia, but by emptying and closing the uterine vessels and tissues, it removes a fruitful source of septic infection.

For the use of faradism, one must be provided with a suitable battery. One of several hours' working capacity is desirable. It should be simple in construction, and ready for use with a moment's preparation. It should be included in the obstetrician's outfit. With two flat electrodes, two by four inches, properly prepared and connected with the opposite poles of the battery, the instrument is ready for use. Its application to the patient is simple. That electrode which is connected with the positive pole of the battery is applied to the lumbo-sacral region, while the other is applied to the hypogastric region. With the connections made, the battery is started, and as soon as the current reaches the fundus and body of the uterus, its walls begin to contract.

BRIEF COMMENTS ON THE MATERIA MEDICA, PHARMACY, AND THERAPEUTICS OF THE YEAR ENDING OCTOBER 1, 1897.

By E. H. SQUIBB, M. D., of Kings County.

Read by title, October 12, 1897.

A criticism made on these comments from time to time since they began, six years ago, has been recently repeated, and deserves just a moment's attention. It is that an unduly conservative view is frequently taken in regard to some of the articles mentioned—especially the newer ones. This the writer begs to take rather as a compliment to his efforts than as a defect to be corrected. The attempt is surely made always to be fair and impartial to all, but in reading over the vast amount of material often written, on the newer articles especially, the writer must use his best judgment in deciding how he would have his readers consider the articles in question. Where there is a chance to lean one way or the other, the conservative side is always the safer one, and the opinion so formed, though misguided, does less harm, as only delay occurs in recognising the efficiency of the article, if such may be the final verdict.

ALPHABETICALLY ARRANGED.

Acacia, or true gum arabic, continues to find more extended use each year, and to supply the increased demand at moderate prices, substitutes are still looked for. The English Imperial Institute has recently reported on three substitutes obtained from India, one of which is apparently very satisfactory. It is a gum of *odina wodier*, known in India as *jingan gum*. The sample submitted was found to be wholly soluble in twice its weight of water, producing a thin, but adhesive, mucilage. A little more care in collecting the gum than was shown in the sample is all that apparently is needed to make it economically useful.

Acetanilid (antifebrin) continues to be a very important agent in the hands of the practitioner, and the surgeon especially is rapidly making a more extended use of it. Its use in minor surgery chiefly as a dusting powder is becoming such a routine practice with an increased number of surgeons that it is no longer deemed necessary to make further formal reports of successful applications. Therefore only a few comments will be made here, and those in the way of the suggestions recommended, and the warnings necessary to be emphasised. Dr. W. A. Fallas, of Horton, Mich., writes to *The Medical News* (Vol. LXX, page 183) as follows:

“In your issue of August 15, 1896, an article by Dr. J. J. Walsh, on ‘Inhibitory Action of Acetanilid on Bacterial Growth,’ strongly attracted my attention; and I was equally interested in Dr. Foote’s study of ‘Formalin-gelatin,’ published November 14. His paragraph on acetanilid, in which he speaks of its comfortable and satisfactory action for two or three days, and of its ultimate failure to check or prevent suppuration, fully agrees with my experience. From this experience I was led to seek some addition to acetanilid which would fully inhibit suppuration. I first tried boric acid, acetanilid, and carbolic acid; but the powders were not sufficiently absorptive, and the compound was too moist and pasty. After many trials, I used this: Powdered acetanilid, 48 per cent.; powdered boric acid, 15 per cent.; powdered starch, finely sifted, 35 per cent.; carbolic acid, liquid, 2 per cent. This compound, though slightly moist and adhesive, has all the effect of a dry dressing; in fact, upon a wound it is, or becomes, perfectly dry. Its absolute comfort leaves nothing to be desired; under its use, there is not, from first to last, the least discomfort, except a momentary smarting on the first application, too trivial to be worth mentioning. The most exquisitely sensitive sore can in a few days be handled with impunity. There is no odour, even of the carbolic acid. It absolutely inhibits suppuration where it can reach the wound surface, and it checks and quickly abolishes suppuration, if that be already present. The powder should be changed twice a day as long as there is a discharge to moisten it; soon, however, the wound becomes absolutely dry, and the powder may be left for days undisturbed, and will still be found as dry as when applied, unless there is a pocket from which pus may come. Cicatrisation is rapid and satisfactory.

“Obviously, this powder would be unsuitable for introduction into a cavity, unless it was intended that the cavity should granu-

late from the bottom; and, in that case, the possibility of easy removal of the masses formed by the pus soaking into the powder before the wound becomes dry, should be considered. On an accessible granulating surface, and upon a sutured wound, it is the nearest to a perfect dressing I have yet seen."

Dr. E. S. Boland, of Boston, Mass., writes to *The Boston Medical and Surgical Journal* (Vol. CXXXVII, page 95) a word of caution:

"The present writer has just had to help care for a severe case of acetanilid poisoning in a young man of nineteen years, in which the drug was absorbed from an immense burn of the second degree, involving the entire back, at least two square feet being affected.

"On the sixth day after the accident, the discharge being rather profuse and offensive, the drug (acetanilid) had been used to hasten cicatrization and to render the wound less offensive.

"From disuse of the old endermic method of administering medicine, we are apt to forget how much a recently-blistered surface can absorb.

"Four hours after the application, this patient was in collapse, and with livid lips, black finger-nails, and general cyanosis, he looked startlingly like a recently-drowned corpse. At times the pulse could not be felt at the wrist, and he could not be aroused except by the most powerful stimuli, and even these failed at the climax of his depression. When aroused, his mind was clear, and no pain was complained of.

"The treatment was cardiac and general stimulants, hypodermically and by the mouth, the application of heat, and inhalation of oxygen gas. The acetanilid was wiped off with oil and vaseline from the burnt surface, and zinc ointment and carron oil (one to four) applied. It was several hours before he could be pronounced out of danger."

Its use in "headache powders" is unfortunately greatly on the increase, and much harm is being done.

Out of the large number of cases of poisoning reported, only two will be mentioned here as being worthy of attention in emphasizing the danger in its use. Dr. Irving M. Snow, of Buffalo, N. Y. (*Archiv. of Pediatrics*, Vol. XIV, page 430), records a case in which the use of this agent on open and granulating surfaces of young infants is fraught with considerable danger from absorption. About four grammes (sixty grains) were applied to the stump of the umbilical cord and after two days—the ninth day

after birth—the infant became markedly cyanotic, the pulse quick and weak and the respiration 60. No signs of either imperfect expansion of the lung or congenital heart disease were present. Although restoratives were used, no improvement in the condition was noticed for ten hours, nor until twenty-four hours had passed did any signs of recovery appear. The total duration of the cyanosis was seventy-two hours. A number of cases are cited by Dr. Snow in which unfavourable and, in some cases, disastrous results followed. He therefore naturally concludes that acetanilid undiluted should be avoided in young children undergoing surgical operations. Especial emphasis is made on the danger in using it as a dressing for the umbilicus of the new born.

Drs. L. N. Gartman and M. V. Ball, of Philadelphia, Pa., report in *The Philadelphia Polyclinic* (Vol. VI, page 381) the following case of acetanilid poisoning:

“C. R., aged three years and five months, was scalded, on the 17th of August, over buttocks, thighs, scrotum, and penis. He was dressed with an ointment containing 10 per cent. acetanilid. About three ounces were used at the first dressing. Two days after the wound was re-dressed, some sloughened tissue was removed, leaving a raw surface, and three ounces of the ointment again applied. Two hours after this application, the child commenced to turn blue; this discolouration gradually deepened, until when the physician arrived, an hour later, the skin and mucous membranes were blackish blue; the nails of fingers, tongue, and lips were ghastly. The smaller veins all over the body were prominent. The pulse was over 160 per minute. The temperature was subnormal, a profuse sweat covered the body, and could be seen collecting on the forehead. The extremities were cold. Respirations were not affected.

“The child was drowsy, but whether this was due to some bromid and opium which had been administered during the morning, is not quite clear. Consciousness was retained; everything was taken by the patient that was offered to it. There were no palsies; the fingers were, however, slightly rigid. Sensibility was not impaired, the child crying when the injured surface was touched. Because of the injury to the penis, urine was voided with difficulty. A small quantity drawn with catheter showed specific gravity 1,033, acid reaction, no albumin. The quantity passed in the next twenty-four hours did not exceed ten ounces. The treatment consisted in restoratives, as whiskey, ammonia, amyl nitrite, hot bottles and hot bath, strychnin. The colour gradually changed

to natural, but occasionally it would deepen to blue, until 7 p. m., six hours after, when it had entirely cleared up. Temperature increased to 101° the next morning and 103° the following evening, coming down to normal on third day. The urine gradually increased in quantity, and never showed albumin. The wounds healed nicely."

Dr. Carl F. Bachmann, of Allegheny, Pa., in a letter to *The New York Medical Journal* (Vol. LXV, page 708) gives his views on the cause of the cyanosis from acetanilid as being at variance with the text-books:

"In some of our leading works on therapeutics I find it stated under the physiological action of acetanilid that the peculiar cyanosis of the face and fingers noticed on the administration of maximum doses of this drug is due to the conversion of haemoglobin into metahaemoglobin and the breaking down of red blood corpuscles. Neither of these statements is borne out by experiment unless very large doses are given, or the subject possesses a strong idiosyncrasy for the drug; yet we find that the peculiar cyanosis (decided by blue tint of face and finger-nails) often occurs when there are no other symptoms of poisoning, and the dose has not been excessive. This cyanosis I have found to be due to the *liberation of free aniline in the blood*, which disappears soon afterward, as soon as it is eliminated by the kidneys and skin. A similar cyanosis, though more pronounced, is found in the workmen of aniline-colour works. This point may not be of vast therapeutic importance, yet may be of interest as an additional factor in the physiological action of acetanilid, which seems to have been overlooked or unknown, and I consequently wish to submit it on that account."

Acid Acetic has been more extensively used in the past year in the way of applying it to the exhaustion of crude drugs, containing active principles. The drugs have been so completely exhausted as to put beyond all doubt the value of this acid as a solvent. It is found that this acid is so effective that a thoroughly representative extract can be obtained which contains such a slight excess of acetic acid that it may be practically disregarded. Even this excess could be gotten rid of by heat if its presence was considered detrimental, but when the dose of the extract in question is considered, the amount of acid present is inappreciable. Moreover, such an acetous extract is found to be permanent, showing no signs of deterioration after a lapse of six or eight months. In the case of drugs containing oleoresins even, the exhaustion by

this acid has also proved to be quite complete, which proves that its solvent properties may be regarded as fully efficient for all classes of crude drugs—thus substituting it quite completely for alcohol as a solvent in the preparation of both fluid and solid extracts. The ready miscibility of these acetous extracts with water without precipitation, together with the strength and uniformity that can be obtained by the use of this solvent, offsets the objection that may be raised against the small excess of acetic acid in the finished extract, while the greatly decreased cost warrants the use of such extracts even though there were most extreme disadvantages against them. Another very important advantage of these acetous extracts is that their active principles are evidently combined with the acetic acid to form salts which are no longer incompatible with many of the prominent medicaments now found in prescriptions. This latter is such an important advantage that it outweighs many minor disadvantages.

Acid Camphoric has again been brought out from its retirement by a prominent mention of its marked value in the excessive night-sweats of phthisis.

It may be well to recall here that this acid is produced by the oxidation of camphor by concentrated nitric acid. It occurs in fine, colourless, needle-like crystals, often seen in the form of scales as well. It is odourless, has a slightly acid taste and readily soluble only in *hot* water. It was Dr. Ralph Stockman's article in the *Edinburgh Medical Journal* (Vol. I, new series, page 45) which again brought this acid and its application into prominent notice. He there goes into the subject at such length that it will be found of value to those who may be interested.

Dr. H. A. Hare, of Philadelphia, Pa., begs leave to remind Dr. Stockman and the profession that he had his first experience with it as long ago as 1890-'91, and continues to advocate its use in the same class of cases. (*The Therap. Gaz.*, Vol. XXI, page 164.)

Acid Carbolica (Phenol) has lost none of its importance among its many rivals. Much has been written upon it in quite a varied sphere of usefulness. Naturally only the most prominent allusions can be looked for here. Mr. A. Ernest Maylard, surgeon to the Victoria Infirmary, Glasgow, Scotland, contributes an article to the *British Medical Journal* (Vol. I, for 1897, page 1475) on "The Production of Asepsis in Acutely Septic Wounds by the Free Application of Pure Carbolica Acid." He prefaces the clinical report of three cases in these words: "The following brief extracts of cases show the great potency of pure carbolica when freely

applied, of rendering rapidly aseptic all the parts of an acutely septic wound. In some of these cases the septic process was that of acute traumatic gangrene, and some ounces of the pure acid were brushed over the raw and freely exposed surfaces. In each instance in which it was employed improvement set in immediately after the application," and concludes as follows: "I could add other cases to those briefly narrated above to show how powerful is the germicidal effect (for such I believe to be the action) of pure carbolic acid in all kinds of acute septic cases, whether these be of the nature of acute abscesses, of acute gangrene, or of septic-inflammatory processes connected with malignant disease. There appears to be no pain connected with the application of the acid except so far as is entailed in the mechanical manipulation of the wound and its surfaces. When sloughs exist these should be practically soaked in the acid. On the living tissues the acid appears to have no deleterious effect; if allowed, however, to run over the skin it excoriates and causes pain."

Dr. Geirsvold, of Norway, has obtained excellent results in the treatment of infecting corneal ulcers by cauterising the ulcers by touching the surface with a Bowman's probe dipped in pure liquid carbolic acid. In some of his twelve cases, although complicated by suppuration of the lachrymal ducts, he did not find it necessary to use either the thermo-cautery, curetting, or subconjunctival injections.

Dr. W. Kramer, of Glogau, Prussia, highly recommends (*Centralbl. für Chirurg.*, Vol. XXVI, page 1105) the injection of a solution of carbolic acid into the parenchymatous tissue of the tonsil in all cases of relapsing tonsillitis. He reports finding all the ordinary methods of treatment of no avail in preventing frequent relapses. He "believes that frequent relapsing tonsillitis develops from latent foci of pus micro-organisms which have been left in the peritonsillar tissue from a previous attack, and stirred up into activity by some accidental cause. The good effect of the carbolic acid injection is, he believes, due to the fact that these foci are thereby rendered sterile."

Drs. Pilate and Vissemans, surgeons to the military wards of the Hôtel-Dieu at Orleans, France, offer what appears to be a very simple and effective method of treating hydrocele in young patients by free washing with carbolic acid solution. After evacuation, they wash out the cavity of the tunica vaginalis with a weak solution of this acid. They take pains to at first clean the surface by means of a brush and soap, and then wash with a solution of

chloride of mercury. A trocar is next introduced, and when the serous fluid has been removed, a warm 3 per cent. solution of this acid is injected, but the precaution is taken of previously boiling this solution. This washing is repeated from four to five times, until the liquid is drawn off quite clear. The trocar is then withdrawn and the puncture closed. The patient evidently feels no pain, as this acid acts as an anaesthetic. In four or five days effusion continues to occur in the sac, but this soon subsides, and the patient is enabled to go about ordinary work. A suspensory bandage is advised, however, for a time. Although this treatment has proved very satisfactory, it is only recommended in simple cases and in young subjects.

Dr. R. Botey, of France, makes use of the following mixture in the local treatment of tubercular laryngitis:

Carbolic acid . . .	1 to 5 grammes (15.4 to 77.2 grains)
Lactic acid . . .	2 to 15 " (30.09 grains to 4 drachms)
Neutral glycerin . . .	20 " (about 5 drachms)

"The laryngeal mucous membrane is first anaesthetised with a 10 per cent. cocaine solution, after which the above mixture is applied to the affected parts. At first only a small amount of carbolic and lactic acid is used, the proportion being gradually increased up to the maximum indicated.

"This treatment combines the advantages of the two methods which at present are principally employed in laryngeal tuberculosis, viz., cauterisation with lactic acid and painting with carbolic acid." (*The Medical Week*, Vol. V, page 408.)

Recognising the fact that carbolic acid has been considerably used in the past in the treatment of enteric fever, Surgeon-Captain R. C. Thacker, A. M. S., of the station hospital at Poonah, India, reports on some twenty-three cases in which he adopts a more guarded administration. (*Brit. Med. Journ.*, Vol. I., for 1897, page 1344). He states: "I claim for carbolic acid, judiciously administered in enteric fever, that in the majority of cases it modifies favourably the duration and height of the pyrexia. The tongue rapidly shows a remarkable tendency to clean and become moist. The evacuations become odourless and inoffensive, and tympanitis is held in check. The mental clearness and physical vigour of the patient are well maintained, with frequently a rapid and complete recovery.

"I present a tabulated statement, giving the names, complications, relapses, and number of days in hospital of the twenty-three

cases treated by the acid. Perhaps I might add that all the cases were most carefully diagnosed with the sanction and concurrence of the senior medical officer and the other medical officers serving here at the time, and in almost every instance they were of a severe and grave type."

Dr. Richard H. Quill, A. M. S., of Chatham, Eng., makes a reply to certain points raised in Surgeon Thacker's paper, which is of interest in connection with the subject. (*Brit. Med. Journ.*, Vol. I, for 1897, page 1513.)

The treatment of tetanus by various methods is occupying a prominent position in the medical world, and is of increasing interest. Mr. Arthur Eddowes, of Loughborough, Leicestershire, England, gives a detailed account of a case of "Traumatic Tetanus Treated by Hypodermic Injection of Carbolic Acid" with recovery, caused by a boot-nail puncturing the inner side of the ball of the great toe. (*London Lancet*, Vol. I, for 1897, page 168.)

Dr. Angelo Poli, of Italy, reports the case of a sixteen-year-old boy developing symptoms of tetanus five days after being kicked by a horse. His foot had previously been dressed with a piece of rag, a leaf, and a coarse plaster. On admission to the hospital the wounded portion of the toe was excised and thoroughly cleansed with both carbolic acid and iodoform. Potassium bromide and chloral were given internally, and a 1 per cent. solution of carbolic acid was injected every two hours. On the second day the boy could open his mouth a little, and his face was less contracted than previously. On the fourth day trismus and opisthotonos were still prominent. On the sixth day the temperature was normal, but the tetanic symptoms continued. At this stage the carbolic acid injections were given every hour. On the twentieth day the boy was practically well, but the solution injections were continued every two hours for twelve days longer. Dr. Poli remarks that this case would apparently seem to support the equine theory of tetanus at first sight, but upon further examination he was convinced to the contrary and would decide that it really supported the telluric theory. (*Gazz. degli Osped. e delle Clin.*, Vol. XVIII, first half year, page 32.)

Prof. P. Muzio, an Italian practitioner, reports on a series of experiments in which he followed out the suggestion of others in the treatment of tetanus with this acid, but his results were almost entirely negative.

Dr. S. Dunogier advises the following application for allaying pain from a decayed tooth:

Crystallised carbolic acid . . .	2 grammes (30.9 grains)
Oil of lemon	2 " (30.9 ")
Ninety per cent. alcohol . . .	10 " (154.3 ")

The oil of lemon acts in disguising the odour of the acid, and therefore in children a small piece of cotton soaked with this mixture may be readily introduced into the cavity, after having washed it out and dried it. Another small piece of the cotton is placed over the soaked piece, either without anything on it or with a few drops of tincture of benzoin.

Apparently, cases of poisoning by carbolic acid are on the increase, both from carelessness and with the object of committing suicide. It is difficult to realise how the sense of smell can be so far blunted, and the marked burning taste of the acid can be borne long enough, to permit a sufficient quantity being swallowed to produce dangerous results. Another and possibly as frequent a class of cases of poisoning is produced while being treated by this agent. Dr. Edwin A. Heller, of Philadelphia, Pa., writes on this subject (*Phila. Polyclinic*, Vol. VI, page 316), giving the history of three cases.

"A Case of Carbolic Poisoning from the Application of a Carbolic Compress to the Skin," is related by Mr. R. Clement Lucas, of Guy's Hospital, London, England, in the *London Lancet*, Vol. II, for 1897, page 537.

Dr. Josef Levai, of Buda-Pesth, Hungary, attributes (*Pester medicin. chirurg. Presse*, Vol. XXXIII, pages 178-227, 251-275) many cases of gangrene directly to the prolonged topical application of this acid, even in weak solutions. He has observed as many as twenty-six cases from this very cause—twelve after using a weak solution, and fourteen from the use of the undiluted acid.

Acid Citric is still receiving attention in the chemist's laboratory, and another claim of having accomplished its synthesis is announced. The reaction is of such a complex order in organic chemistry that it would be of little value to repeat it here.

California is so rapidly becoming a prominent center of supply, and producing such a fine quality of lemon, that it is not at all surprising to read the recent statement that a factory for the manufacture of citric acid and oil of lemon is now established at San Diego. Forty thousand lemons are worked up each week, but it is claimed that it has taken from four to six weeks to condense the juice of sixty to seventy lemons into one pound of acid.

In relation to its medicinal use, we hear from Dr. Georg Müller,

of Berlin, Prussia, that he has succeeded in healing up obstinate wounds by applying lemon juice. He alludes (*Therap. Monatsh.*, Vol. XI, page 215) to one wound which had refused to respond to all methods of treatment for four months, in which he was greatly surprised to notice immediate signs of healing and complete recovery from such an application. The juice and compresses were applied twice a day. Other cases have followed this one, showing equally favourable results.

"It is announced that Dr. Alexander Edington, bacteriologist to the Cape of Good Hope government, has found that the blood of animals affected by rinderpest, when treated with citric acid and kept for such a time as to insure the death of the contagium, will, when injected, immunise all animals exposed to infection. An animal thus treated received ten days later an injection of a large quantity of blood from another animal suffering severely from rinderpest, without being at all affected or suffering any rise in temperature. Dr. Edington has obtained equally satisfactory results from the bile of affected animals similarly treated and glycerinated. A herd of 128 cattle near Kimberley was selected for a field experiment, 126 being injected and two left for a control experiment. Of the 126 injected cattle, one shortly died (as was supposed, from its infection beforehand from cattle on the adjoining farm, amongst which it was found that rinderpest was prevalent). The remaining 125 animals were ten days afterwards injected with virulent blood, which was at the same time and in the same dose injected into the two unprotected animals. Of the 125 injected animals, two had a slight attack of rinderpest, but recovered, and 123 remained quite healthy, but the two control animals died of rinderpest on the twelfth day. This method appears to give better results than the French serum treatment of Dr. Koch's method. As proof of the demand that has arisen for the new injection, it is stated that four tons of glycerin have already been used by Dr. Edington in the preparation of his protective fluid, and that fourteen tons are now on the way to South Africa." (*Brit. Med. Journ.*, Vol. II, for 1897, page 1015.)

Acid Lactic is rather a new agent to think of in relation to the treatment of tubercular laryngitis, but R. Botey, of France, recommends a formula containing carbolic and lactic acids with glycerin, which will be found under the head of acid carbolic.

Dr. Zolotavine reports (*La Médecine Moderne*, Vol. VIII, Sept. 18, 1897) having used this acid with agreeable success in a long-standing case of arthritis deformans. Ten drops of this acid were

administered each day upon an empty stomach, no food being allowed for as much as an hour and a half after the dose. In this particular case, the affection had existed ten years, and the patient was compelled to keep in bed for the year just previous. The dose was gradually increased up to forty drops a day. The beneficial results of the acid were evident about the end of three weeks. The pains in the joints were so modified that the patient was able to rise from bed and walk a little. The appetite improved and the abdominal pains entirely disappeared. Aside from this acid, no other internal medication was attempted. Light massage was employed externally. Gradual improvement continued until the time the report was made, when the patient could readily walk without a cane and attend to regular duties.

Acid Picric (tri-nitro-phenol) has taken considerable prominence among surgeons during the past year, especially in the treatment of burns, first recognised by Dr. Paul Thiéry, of Paris, France. It is now reported that its beneficial effects are becoming so well recognised by the laity that some factories in France keep a cask supplied with water saturated with picric acid standing in a convenient place, for the workmen's use on short notice. The French government have issued notice to make use of it in the army, and for surgeons on duty to report their observations.

Dr. Thiéry deplors the inconvenience of the staining of the flesh and clothes, but argues that this minor objection must be studied and overcome. To promote a more rapid action, and thus a more prompt relief, he now makes use of ether or alcohol as the solvent.

Dr. Rochon, of Paris, France, criticises the usual three forms of dressing to the umbilical cord as all being defective. The oily dressing is imperfectly antiseptic, and does not promote the keratogenic change of the new epidermic cells. He objects to the moist dressing, not that it fails to furnish the requisite antiseptics of the part, but it delays the dropping off of the cord, and when this does take place, often leaves an imperfect cicatrix. The dry dressing he finds defective on account of the danger to premature separation and resulting hæmorrhage, due to the rapid drying up of a rigid stump. Basing his recommendation on an experience of at least two years, he therefore strongly recommends a 1 to 200 picric acid solution applied around the cord on a piece of absorbent cotton soaked in the solution. Decomposition is thus avoided, and rapid cicatrization is promoted by reason of the remarkable cicatrizing property of this acid. He has often found one dress-

ing sufficient, but he usually finds it best to repeat it once, either on the second or third day.

In relation to its use in the treatment of burns, only a few confirmatory statements will be alluded to here, as all the testimony appears to be in its favour. Dr. C. H. Souther, of Balaklava, South Australia, writes to the *British Medical Journal* (Vol. I, for 1897, page 60) as follows:

"Mr. R. Shalders Miller refers to Mr. D'Arcy Power's notes on the use of a solution of picric acid for superficial burns and scalds. He suggests as a substitute, hazeline, and describes its use.

"I had heard of and used picric acid in solution for burns even before I saw Mr. Power's contribution; it appeared to have been used with much success in certain iron foundries and sugar works, a large open vessel of it being kept in readiness for emergencies. I have used it (the solution to the strength of saturation) in several cases, one a burn of the third degree, and shall certainly not expect to find better results from any other application. I simply painted the whole burnt surface with a saturated solution of picric acid in water, using a large camel-hair brush with which to do so. In later cases, I found that no evil results followed the practice of leaving the primary dressing (covered with oiled silk and cotton wool) on for a period of from three days to a week, and similarly with subsequent dressings. Greater simplicity, harmlessness, and freedom from pain, and resulting scar contraction can hardly be gained by hazeline, which latter, Mr. Miller admits, is expensive."

At a meeting of the Edinburgh Medico Chirurgical Society, held on July 7th, last, Mr. Miles read a paper recommending this acid as a primary dressing for either superficial or extensive and serious burns. His proceeding was to first cleanse all the parts with a weak carbolic acid solution; to prick all the blisters, and then to apply lint soaked in a saturated solution of this acid. Finally, cotton wool is placed over the lint and a bandage applied. The subsequent treatment in regard to the dressings depends upon the amount of discharge, the temperature, and other general symptoms. It was found of benefit to administer chloroform while the dressing was being attempted, especially in children. It was found best to dress the parts about twice a week. Mr. Miles's cases have now reached 100 in the Leith Hospital, and the advantages he mentions are simplicity, painlessness, asepsis, small amount of discharge, infrequent dressings, the astringent action of this acid in preventing inflammation, its effect in promoting

the growth of epithelium, rapid separation of sloughs, absence of toxic symptoms, and economy in dressing. The only disadvantages he found were staining of the hands and bed clothes. Vaseline smeared over the hands lessened this disadvantage, if it did not entirely obviate it. Washing them in alcohol afterwards tended in the same direction.

In the discussion which followed, Dr. Joseph Bell took occasion to state that he was not satisfied with his results, as they were not so satisfactory as those of Mr. Miles. Dr. W. Allan Jamieson also was disappointed, as he had not obtained satisfactory results in the treatment of eczema with this acid.

Dr. Courtellemont, of Hôpital Saint-Antoine, Paris, reports (*Gaz. Hebdom. de Médecine et de Chirurg.*, Vol. XLIV, page 712) his favourable results in the treatment of burns, ulcers of the leg, and simple wounds. He made use of a saturated solution of from 12 to 13 parts to 1,000 on well-soaked compresses in all cases. Two prerequisites are: First, the absence of any impermeable outer covering, for the water must be allowed to evaporate from the solution and permit the acid to become dry in order to insure its action; second, there must be a long interval between the applications, in order to allow the dry acid to act effectively. The dressing should not be disturbed for from three to seven days. In similar treatment of simple wounds, complete cicatrisation was accomplished even more rapidly than in burns and ulcers.

Dr. Iou V. Sila-Novitsky, of Moscow, Russia, reports (*Le Bulletin Méd.*, Vol. XI, page 687) excellent results in thirty-two cases of burns—all children. He has no hesitation now in trying this treatment on a larger scale. In the case of slight burns, he makes no attempt to disturb the dressing for four to six days, and then invariably expects to find the skin quite normal. In the severer cases, it is necessary to renew the dressings. In the majority of his cases, the analgesic effect was prompt and complete.

Dr. William Maclellan, of Glasgow, Scotland, has written a paper (*Brit. Med. Journ.*, Vol. II, for 1896, page 1826) on "Picric or Carbazotic Acid as a Therapeutic Agent, Especially in the Treatment of Certain Inflammatory Skin Affections," in which he states:

"So far as I am aware, carbazotic acid has been little used, at least in this country, in the treatment of inflammatory skin diseases. In 1877, M. L. L. Grangé drew attention to the healing power of this remedy in some varieties of eczematous eruption. This therapeutic use of carbazotic acid seems to have been almost

entirely overlooked, and is not mentioned in any of the larger works on dermatology that I have consulted. In a large number of cases in which I have employed picric acid locally, I have found it more successful by far than any of the other remedial agents more commonly in use, and I think it well worth a more extensive trial."

He divides his subject into two heads: "I.—As a Local Application," and "II.—As an Internal Remedy," and finally concludes:

"Thus carbazotic acid is a harmless topical agent. Although so nearly akin to carbolic acid, no apprehension need be entertained as to its absorption, even when applied to extensive surfaces. Like nitric acid, it limits its own action by coagulating the albumin of the tissues to which it is applied. As heat readily decomposes the acid, accidental stains may be removed from the underclothing by boiling. If the acid is employed internally, the patient should be warned of the discolouration which commonly follows, and it should be given to children in very small and tentative doses, as large doses are not well borne."

Dr. Henry Waldo, of Bristol, England, feels called upon to publish his experience as follows, although criticising somewhat Dr. Maclellennan's conclusions:

"As picric or carbazotic acid is at present being much used as a local application in cases of eczema, and as Dr. Maclellennan says that it is quite free from danger, may I say that in my experience, although it is most valuable in the majority of cases, still in one adult patient I prescribed it for, it caused much prostration, and, in fact, all the symptoms of carboluria, with very dark urine. The dermatitis affected the arms and legs, and the drug was ordered to be painted on night and morning. After this had been done for ten days, the unpleasant symptoms I have mentioned developed, and certainly resembled the action of carbolic acid, to which it is, as Dr. Maclellennan mentions, constitutionally related." (*Brit. Med. Journ.*, Vol. 1, for 1897, page 331.)

Dr. Maclellennan replies:

"In the *British Medical Journal* of February 6th, Dr. Henry Waldo writes a memorandum on a possible effect of picric acid when applied to an extensive 'dermatitis.' He (and also Dr. C. M. Allan, *British Medical Journal*, February 20th) endorses the opinion I have expressed, in my paper in the *Journal* of December 26, 1896, when I drew attention to the great value of picric acid in the treatment of certain inflammatory skin affections, but he expresses a fear that it may be absorbed and give rise to symptoms resem-

bling those usually associated with carboluria. This appears to have happened in one case in which Dr. Waldo employed it. May I say, in reply, that I have used picric acid in a very large number of cases, and have applied it freely to large areas of inflamed and denuded skin, without ever once having seen any unpleasant symptoms follow its use? When picric acid is administered internally, even in considerable doses, the unpleasant symptoms to which it may give rise are not those suggestive of carbolic acid poisoning. Thus, while Dr. Waldo's experience in the one case to which he refers in his memorandum, is interesting, and should be borne in mind, it need not, I think, deter any one from making a free use of this valuable therapeutic agent in any case where its astringent and antiseptic properties suggest its use. As I have shown, the immediate coagulation of albumin which follows its application to a raw or discharging surface, limits its own action, and must in almost every instance practically render absorption impossible." (*Brit. Med. Journ.*, Vol. I, for 1897, page 640.)

At a meeting of the Paris Medical Society of the hospitals, held on May 21st, last, Dr. Gaucher reported the excellent results he had obtained in treating acute vesicular eczema with this acid, encouraged by Dr. W. Maclellan's experience. He made use of a 1 per cent. solution every other day applied on cotton wool well soaked in the solution. This dressing was not disturbed for two days. The inflammation rapidly subsided, and the pruritus was relieved. Chronic eczema does not appear to respond to this treatment but Dr. Gaucher suggests that it ought to succeed in pemphigus and other acute skin affections. (*La Sém. Med.*, Vol. XVII, page 200.)

At a meeting of the Paris Society of Dermatology and Syphilography, held on June 10th last, Dr. Leredde confirmed Dr. Gaucher's results, but Drs. E. Besnier and J. Darier had seen some accidents and irritation from the use of this solution. Dr. Darier claims that its action in chronic eczema is not only useless, as given by Dr. Gaucher, but that it does much more harm than good.

Dr. A. Brousse, of Montpellier, France, lends his testimony to its marked applicability in acute eczema, and total failure in chronic cases. He uses Dr. Paul Thiéry's formula:

Picric acid	3 parts
Tepid boiled water	250 "

after allowing it to cool and then decanting.

"Dr. Brousse attaches great importance to the following precaution: before applying the picric acid, he washes the parts well with a boracic lotion, so as to render the cutaneous surface as completely aseptic as possible. He rightly considers that the abscesses which occasionally supervene in cases of burns, treated by picric acid, are due to suppuration bacilli, imprisoned under the dressing, and states that he has met with small miliary abscesses which formed under the picric acid dressing in a case of eczema of the palm, as a result of deficient asepsis."

Mr. C. M. Allen, Surgeon to the Longton Cottage Hospital, Stafford county, England, publishes (*Brit. Med. Journ.*, Vol. I, for 1897, page 457) "A Note on a Few Surgical Uses of Picric Acid," in which he says:

"In recent wounds, with or without great loss of substance, this treatment is equally beneficial, and is not so troublesome nor so unsuccessful as skin grafting, where the size of the wound would render that advisable. I have under my care a wound of the forearm with loss of skin which a hand could not cover, healing rapidly under this combined treatment after the Thiersch method had failed. In that most dangerous and most intractable form of haemorrhage from wounds in haemophilic subjects picric acid solution acts better than any form of treatment I have tried. Within the last few years I have had two such cases, one of which belonged to a distinctly haemophilic family. The first, a cut several inches long, was sprayed with the acid while the blood was being mopped off with wool; and treated thus several times daily, did better than with iron and other astringents. The second, an abscess of the glands of the neck after scarlet fever, which necessitated incision, was packed with picricised gauze and did well.

"In cases of severe cellulitis arising from the introduction of some irritant poison, and when incision or amputation is necessary, the bleeding from the paralysed and dilated radicles becomes almost uncontrollable. If the incision is packed with gauze wrung out of the picric solution the bleeding is soon controlled. For the coosing after the amputation the spray is much more successful than hot water, yet a combination of both may be used with great advantage, the water being used first (as it would decompose the acid if both were combined) and the spray applied immediately after. The acid acts as an astringent and antiseptic haemostatic, and the parts heal *cito, tuto, et jucunde*."

Actol (Silver Lactate), the surgical antiseptic alluded to here

last year, has been little heard of in the current medical literature of the past year, except that it appears to have now some value as an antiseptic. Dr. Marx has carefully experimented with this agent to determine the extent of its claimed disinfecting property, for Dr. B. Credé, of Dresden, Germany, claims that it disinfects the whole body. Dr. Marx met with disappointing results in this line and reports that he finds it has no such extensive action. He did verify its antiseptic property, however, and recommends further trials.

Airol (bismuth oxy-iodo-gallate) has been more generally recognised even than last year as a most efficient antiseptic. Dr. C. Hägler, of Basle, Switzerland, has pushed his investigations still further and reports many other applications where it is of marked service—particularly striking results in such superficial lesions as ulcers and burns.

Prof. P. Bruns, of Tübingen, Wurtemberg, Germany, makes use of the following paste in wound dressing:

<i>Airol</i>	.	.	.	.	.	.	.	.	.	1 part
<i>Acacia Mucilage</i>	.	.	.	.	.	.	.	.	.	1 "
<i>Glycerin</i>	.	.	.	.	.	.	.	.	.	1 "
<i>Kaolin</i>	.	.	.	.	.	.	.	.	.	2 parts

which he spreads with a spatula rather thickly over the sutured wound, and rubs it into the suture holes with the finger. It appears to be a non-irritant and dries rapidly, but allows the secretions to permeate it. (*Beiträge zur klin. Chirurg.*, Vol. XVIII, page 507.)

Dr. Hugo Tausig extols it as a most efficient substitute for iodoform in paronychia, boils, carbuncles, chronic ulcers of the foot, otitis media, soft chancres, acute and chronic gonorrhoea (using a 10 per cent. emulsion of glycerin injection) and trachomatous conjunctivitis—of all of which he has treated one or more cases.

Dr. L. de Sanctis, of Rome, Italy, reports most "brilliant" results in the treatment of both secreting and pruriginous intertrigo, when *airol* is dusted on in the powder form. All the distressing symptoms were immediately relieved. (*Gazz. degi Ospedali*, Vol. XVII, page 1389.)

D. H. Stauffer, of Travers, Switzerland, fully corroborates Dr. Hägler's experience in the treatment of burns, and adds varicose ulcers of the leg and bedsores to his list of affections. He has found its marked analgesic action is increased by making use of the following formula:

Airol	1 part
Lanolin	10 parts
Distilled water	10 "

Dr. J. Löblowitz, of Prague, Prussia, reports the results of his experiments with this agent, and finds it of great value in primary syphilomata, soft and hard chancres, and wounds resulting from the incisions of suppurating buboes, where it was found to act particularly well.

Dr. W. Howald, of Bern, Switzerland, reports good results in the treatment of gonorrhoea with the following formula:

Airol	2 parts
Distilled water	5 "
Glycerin	15 "

which will check the discharge most efficiently. (*Corresp.-Blatt für Schweizer Aerzte*, Vol. XXVI, page 753.)

Drs. F. Aemmer, of Basle, Switzerland, M. O. Goldfarb and G. A. Zelenski, of Kherson, Russia, call attention to some disadvantages in using this agent, such as bismuth poisoning, intense pain, and the formation of large bullae when introduced into abscesses. or in the form of suppository introduced into an anal fistula. (*La Sem. Médicale*, Vol. XVII, Annexes, page 158.)

Dr. Charles Cassan reports most favourable results in the treatment of metritis by the introduction of intra-uterine plugs saturated with airol. He reports thirteen cases, nine of which were completely cured; three were simply improved, the patients having refused to go on with the treatment. In one case the treatment failed entirely; the woman was very unmanageable, and was also suffering from salpingitis in addition to her metritis. Even in the unfavourable case, although the salpingitis remained unaffected, the metritis was improved, and the leucorrhoea almost entirely ceased.

Dr. G. Valenti, of Italy, recently reported very favourable results in various forms of keratitis and purulent conjunctivitis in a paper read before the Royal Academy of Medicine in Rome, Italy. His cases included kerato-hypopyon, trachomatous conjunctivitis, phlyctenular and simple ulcerative conjunctivitis—using the powder form and ointment. In the discussion which followed, however, no one else appeared to have had such good results as he reports. (*La Riforma Med.*, Vol. IV, for 1896, page 737.)

Good results are reported by Dr. P. Ardin-Delteil, of the Montpellier Hospitals, in the use of the following formula :

Äirol	1 gramme
Vaseline	20 grammes

in ophthalmia neonatorum. Applications were made twice a day and removed after about ten minutes' contact. Improvement began before twenty-four hours had passed and rapid recovery resulted. (*La Presse Médicale*, Vol. V, Annexes, page 89.)

Drs. E. Venuti and P. Barbagallo, of Cantania, Sicily, have reported on eleven cases of diarrhoea in adults treated by this agent in doses varying from 100 to 300 milligrammes (about $1\frac{1}{2}$ to $4\frac{1}{2}$ grains), amounting in all to 200 to 900 milligrammes (about 3 to 14 grains) during a day. The cases were acute and chronic intestinal catarrh, and tubercular diarrhoea. The number of stools rapidly decreased and the pain passed off.

Dr. Domenico Fornara, of Taggia, Italy—a town just outside of San Remo—had the opportunity of trying this agent in a typical case—a woman twenty-nine years of age—of leprosy, with very encouraging results. With the object of confirming his diagnosis, Professor Profeta, of the University of Genoa, examined the case for him and found that the eyeball and periosteum of the clavicle had then been attacked, and that it was a typical case of five years' standing. Äirol was dusted on the ulcers and open abscesses, a ten per cent. vaseline ointment applied to the conjunctivæ and rubbed over the whole body, and again a ten per cent. glycerin solution injected where softening of the tissues had begun. The case rapidly improved—in about two months' time—and no permanent ill-effects followed. The gums did become discoloured by the bismuth, and when the doses were much increased in size, a certain amount of prostration occurred, but the natural remedy for these conditions was promptly applied. The formula for the injection used was :

Äirol	1 part
Glycerin	7 parts
Distilled water	2 “

Tonics and massage were energetically administered to assist in the very remarkable amelioration of this evidently severe case. Dr. Fornara is so confident of his specific results that he undoubtedly is very desirous of having äirol tried further and extensively. (*Wien. medicin Blätter*, Vol. XX, page 135.)

Alummol, the astringent and antiseptic, has been little commented upon in the medical literature of the year, although there are other evidences to show that it is still in use. Those who have taken pains to mention its use have simply verified what has been previously claimed for it. The following formula is recommended for an efficient bougie:

Alummol	0.25 grammes (3.8 grains)
Rice starch	2.00 " (30.9 ")
Sugar	3.00 " (46.3 ")
Glycerin ointment	0.50 " (7.7 ")
Acacia mucilage	3 drops.
Distilled water	8 "

To be made up into ten bougies.

Ammonol (so-called ammoniated phenyl-acetamide), "the anti-pyretic, analgesic, and stimulant," continues to be pushed by the now well-known manufacturers, and apparently the favourable testimony of more physicians than a year ago, has been obtained, if the published reports are to be believed, and there is little doubt that the physicians' signatures are trustworthy. Samples continue to be liberally distributed, and possibly many are tempted to lend their aid to the manufacturers by results which they claim to be successful with this new product. One of the most prominent mentions of this article was reported by Dr. C. A. Herter, of New York city, at a meeting of the New York Neurological Society, on November 5th last, when the subject of the "Pathology and Treatment of Migraine" was before the society. Dr. Herter reported that he obtained the most relief from pain from the use of ammonol. During the discussion which followed, out of the seven practitioners speaking, only two mentioned having used ammonol: Dr. Joseph Collins, who stated that he had found ammonol of no use whatever, and Dr. C. H. Brown, that 800 milligrammes (about $12\frac{1}{2}$ grains) had caused extreme and dangerous prostration. He also had not observed any benefit from its use in other cases.

A careful examination of this agent has recently been made by Mr. George M. Beringer, of Camden, N. J., and his results are so convincing that it is thought advisable to quote his full report here as it appears in the *American Journal of Pharmacy* (Vol. LXIX, page 150):

"The manufacturers state that 'ammonol is a product of the amido-benzene series ($C_6H_5NH_2$). It differs essentially from the

other medicinal coal-tar products, especially in that it contains ammonia in an active form, and has a stimulating action on all the vital functions.' Its medicinal action is claimed 'to be stimulant, antipyretic, and analgesic.' The chemical composition is given as 'ammoniated-phenylacetamide,' but the chemical formula given on the label, ' $C_6H_5NH_2$,' is the accepted formula for *amido-benzene*, which is commonly spoken of as *aniline*.

"The writer was induced to make an examination of this *valuable new coal-tar derivative* (?). It is a powder, having a very faint yellow colour, put up in one ounce vials. The odour is strongly ammoniacal, and on smelling the vial one can readily detect the peculiar empyreumatic odour of commercial ammonium carbonate. On closer examination, even with the naked eye, one can detect small particles of a crystalline character, indicating imperfect comminution of a crystalline ingredient. This is the so-called *amorphous micro crystals* of the manufacturer's description.

"One gramme of the powder was rubbed up with 20 cc. of water and poured on a tared filter, and the mortar and filter carefully washed with an additional 10 cc. of water added in small portions. After drying, the residue was a white powder, weighing .360 gm. A portion left no ash on incinerating. On boiling with concentrated potassa solution, it was converted into aniline, and, with chloroform, readily yielded the isonitrile reaction. From these tests, also supported by solubility and colour reactions, I was led to conclude that this was pure phenylacetamide, or acetanilid. According to the U. S. Pharmacopoeia, acetanilid is soluble in 194 parts of water, and so the 30 cc. of water used would have extracted .154 gm., and this, added to the undissolved portion on the filter, would give the total amount of acetanilid as .514 gm., or about fifty per cent.

"The filtrate was a light canary-yellow-coloured solution, and, on testing, showed the presence of sodium and ammonia as carbonates.

"The filtered solution of 1 Gm. of ammonol in 30 Cc. of water, evaporated on the water-bath, yielded a residue of .222 Gm., and on prolonged heating minute micaceous crystals separated and sublimed into loose tufts on the surface. These crystals proved to be acetanilid, showing that, as stated above, it had been partly extracted by the water, and that it was more or less volatile at the temperature of the water-bath. On incineration, the residue left .158 Gm. ash, which required 29 Cc. $\frac{N}{10}$ sulphuric acid for

neutralisation, which, calculated for sodium bicarbonate, would be .24317 Gm.

"One Gm. of ammonol was incinerated, and left an ash weighing .157 Gm., which, titrated with $\frac{N}{10}$ sulphuric acid, required 30 Cc., or, calculated as sodium bicarbonate, .2515 Gm. This would indicate the presence of about 25 per cent. of sodium bicarbonate in the product, and leave 25 per cent. for ammonium carbonate.

"On adding hydrochloric acid in excess to the canary-coloured aqueous solution, the colour is changed to a rosy pink, which is again changed to the pale yellow on adding ammonia water. With nitric acid, the colour is also changed to pink, but in excess is destroyed, the solution becoming colourless, and ammonia does not again restore the original colour. From these reactions, I became convinced that a small amount of some aniline colour had been added as a disguise, and not for medicinal action. An examination of a number of so-called aniline orange and yellow colours, for one possessing similar reactions and tinctorial properties, was made, and the dye known as *metanil-yellow* was found to give similar reactions. According to Allen (*Commercial Organic Analysis*, Vol. III, Pt. 1, page 148), metanil-yellow, or orange MN, is the sodium salt of diphenylamine-azobenzene-meta-sulphonic acid.

"From my examination, I am compelled to conclude that 'ammonol,' instead of being a new 'coal-tar derivative,' is merely an admixture of the well-known acetanilid, sodium bicarbonate, and ammonium carbonate, and that the following formula represents its real composition:

R Acetanilid	10 grammes
Sodium bicarbonate	5 "
Ammonium bicarbonate	5 "
Metanil-yellow	0.005 "

"Mixtures of acetanilid and sodium bicarbonate, as an antacid and antipyretic and analgesic, have been in daily use by nearly every physician for at least a decade. The addition of ammonium carbonate as an arterial stimulant is not unusual, and in many cases such a mixture must undoubtedly prove serviceable. Mr. Joseph W. England informs me that at the Philadelphia Hospital they use an ammoniated acetanilid, the formula of which is:

Ammonium carbonate	1 grain
Sodium bicarbonate	1½ grains
Pulv. acetanilid	2½ "
Misce.	

Dose, one to three powders.

"Ammonol thus appears to be another of the numerous mixtures of acetanilid that are being palmed off on the gullible physicians as new and valuable discoveries. The names published in their circulars would indicate that the Ammonol Chemical Company have been unusually successful in playing on the credulity of quite a number of prominent practitioners, and medical as well as pharmaceutical journals."

Amygdophenin—an analogue of phenacetin—the new compound derived from par-amido-phenol alluded to here last year, has not been heard of in the current medical literature of the past year.

Amyloform, the proposed substitute for iodoform, is formed by the combination of formaldehyde with starch. It has recently been patented and introduced by Prof. A. Classen, of Aix-le Chapelle, France. It appears as an almost impalpable white powder, without odour and taste, and non-toxic. It is practically insoluble in all the ordinary solvents, and does not decompose even at a high temperature. It, however, splits up into its component parts when in contact with suppurating wounds. It is reported to have succeeded in a number of cases of deep wounds with supuration of bone from osteomyelitis, or tubercle, where iodoform had been used with much satisfaction. In varicose ulcers of the leg, and in the primary sores of syphilis, good results have been obtained.

It is claimed to be an excellent antiseptic and deodoriser, without any irritating properties, and is cheap. It looks to be a formidable rival of glutol. More definite data will, no doubt, follow before long.

The addition of iodine to the above compound gives enterprising manufacturers a chance to offer a new compound called "amylo-iodoform;" also a substitute for iodoform.

Anäsin is a new synthetic, hypnotic, and anaesthetic, introduced by its manufacturers in Basle, Switzerland. It is claimed to be an aqueous solution of tri-chlor-pseudo-butyl-alcohol, or aceto-chloroform. Its physiological action was investigated by Professor Kossa, and still later by Dr. Zoltán von Vámosy, of Buda-Pesth, Prussia (*Deut. Med. Woch.*, Vol. XXIII, Therap. Beilage, page 58). It is said to resemble chloral hydrate in its hypnotic action, the dose being 500 milligrammes to 1 gramme (7.7 to 15.4 grains). Even the maximum dose may be administered without producing ill-effects. A 1 per cent. solution is found to have the same anaesthetic properties as a 2 to 2½ per cent. solution of cocaine hydrochlorate. Its advantages are freedom from

toxicity, does not irritate when applied locally, keeps well, and may be sterilised. It has been used in the eye, injected subcutaneously, applied to the larynx, pharynx, and nasal mucous membrane, and in dental operations. When applied to the tongue or eye, for instance, the anaesthesia is slow in developing, as its diffusibility is slow, thus going to show that it must in all cases be applied directly to the spot requiring its anaesthetic action. It has an advantage over cocaine, as used in the eye, in that it does not produce mydriasis. The iris is not affected by it. Further researches are urged.

Analgen (ortho-oxy-ethyl-ana-mono-benzoyl-amido-quinoline) has again been brought into notice by the report of fifty-nine cases in the practice of Dr. Moncorvo, of Rio de Janeiro, Brazil, exclusively used in the treatment of children. Thirty-three of the cases were various forms of malaria. The remaining twenty-six comprised quite a variety of affections: Tuberculosis, lymphangitis, arthrosynovitis, parotiditis, Potts' disease, hip disease, epilepsy, hysteria, chorea, otalgia, herpes zoster, urticaria, and painful tumor of the liver. The youngest child was twenty days old; the oldest, thirteen years. The dose varied from 250 milligrammes to 3 grammes (about 3.8 to 46.3 grains) during the twenty-four hours. The urine becomes a deep yellow or red colour whenever large doses are administered, but albumin or sugar was never found. No unfavourable action in the respiration or circulation was ever noticed. The malarial cases responded promptly, and the duration of the attack was much shortened. In the twenty-six cases of the various affections, the pain was relieved, as well as the high temperature reduced. It was administered in slightly acidulated water, but as it has no taste, it is well suited for children (*Bull. de l'Académie de Méd. de Paris*, Vol. XXXVI, page 574). It is recommended to give sodium bicarb. with it, to avoid discolouration of the urine, for it is argued that the discolouration of the urine is due to its decomposition in the system by combining with the uric acid. The sodium bicarb. prevents this.

Anilipyrin is the name given by Drs. A. Gilbert and Yvon to a mixture of acetanilid and antipyrin, and offered as a new antipyretic and analgesic. If equal parts of acetanilid and antipyrin are mixed and brought to the liquefying heat—105° C. (221° F.)—a product is formed which the introducers call anilipyrin A; if two parts of acetanilid and one part of antipyrin are treated in the same way anilipyrin B is formed. Both these products are readily soluble in the usual solvents, even more so than the component

parts separately, for 43 grammes (about 1 oz. 3 drachms) will dissolve 10 grammes (154.3 grains) of distilled water at 15.6° C. (60° F.), whereas only 16 grammes (246.9 grains) of antipyrin and 50 milligrammes (4.5 grains) of acetanilid will dissolve in the same quantity of water. As would naturally be inferred, this condensation product is indicated in influenza, acute articular rheumatism, migraine, neuralgia, and the like. From experiments upon guinea-pigs, it proves to be more marked in its effects than antipyrin and less marked than acetanilid. It is toxic to a slight degree. The dose recommended is 500 milligrammes (7.7 grains) up to a daily dose of 1 to 2 grammes (15.4 to 30.9 grains).

Clinical reports are awaited.

Anozol is the name coined by Dr. Policarpo Diaz, of Salamanca City, Mexico, for a mixture of powdered thymol and crystals of iodoform, to furnish iodoform "free from objectionable odour," as the composition of the name indicates. The proportions are 100 to 200 milligrammes ($1\frac{1}{2}$ to 3 grains) of thymol to 1 gramme (15.4 grains) of iodoform. The odour of the mixture is that of thymol. A general verification of this desired but doubtful result is awaited.

This name should not be confused with *anisol*—a very different product to be alluded to here later.

Antinonnin (potassium ortho-di-nitro-cresolate), recommended as a disinfectant and parasiticide this time last year, has been unheard of, and no doubt has retired for good.

Antinosin (sodium salt of tetra-iodo-phenol-phthalein) is evidently better recognised now than a year ago. Little has appeared about it in the foreign medical literature, but it has been more frequently reported upon in this country.

Dr. Rudolf Müller has made a report (*Aerztliche Rundschau*, of Munich, Vol. VII, page 1) of his experience with it in gynaecological and obstetrical practice. For disinfecting in minor gynaecological operations, as an ablution for the external genitals of a parturient woman, and in the form of a vaginal douche, Dr. Müller finds a 2 to $2\frac{1}{2}$ per cent. solution of considerable value. In his obstetrical practice he makes use of a 2 per cent. solution where he formerly used a 1 to 5000 corrosive sublimate solution.

Dr. G. De Buck, of Belgium, reports that as a surgical antiseptic, a 1 to 200 solution of this agent meets all the necessary requirements.

In this country, the principal definite reports are as follows: Dr. Claude A. Dundore, of Philadelphia, Pa., writes on "The Use

of Nosophen and Antinosin in Surgery," and concludes: "A trial of these two iodine combinations by those not acquainted with their advantages will, I am sure, in a very short time convince them of their superiority over like agents heretofore employed, especially in regard to freedom from toxic effects."

Dr. Archibald L. Dix, of Philadelphia, Pa., reports a case of "Lupus," successfully treated by antinosin, in which he makes the strong statement: "After a few weeks of the use of this remedy, and trimming the edges from time to time, the callous indolent sore of over three years' standing became gradually transformed into one of a clean nature. The granulations were of a bright, healthy type. The powder was then changed for one of a milder action, composed of bismuth subnitrate, twenty parts, antinosine, one part. This combination was maintained in use until healing was complete, which was gradual and uninterrupted."

At the annual meeting of the New Jersey State Medical Society, held in Atlantic City, N. J., on June 22, last, Dr. Talbot R. Chambers, of Jersey City, read a report on "Progress in Ophthalmology and Otology," in which he states that antinosin solutions and nosophen are excellent substitutes for iodoform. When discharge is present, he emphasises the importance of keeping the parts clean. To accomplish this most satisfactorily, he has found the best means is syringing with carbolic acid solution first, wiping out with cotton-tipped probes saturated with hydrogen dioxide solution and drying, then follow this with a 5 per cent. solution of antinosin on the cotton-tipped probes. (*Journ. Amer. Med. Assoc.*, Vol. XXIX, page 179.)

Antiphrasin has had to take a comparatively menial position on account of the very prominent position assumed by Professor Koch's new tuberculin, so that little has been seen upon it throughout the past year.

Antipyrin (phenazone) has lost little of its importance to the medical practitioner during the past year, although cases of its ill-effects continue to be reported. Dr. G. Lyon reported to the Therapeutical Society of Paris, France, at its meeting on March 10th last, that he had met with such cutaneous eruptions as scarlatinoid or rubeolar erythema. Dr. Jasiewicz also reported like cases, but stated that he had observed that disagreeable effects are far less likely to occur if the antipyrin be given in some liquid form of prescription rather than in the customary powders. Professor Pouchet called attention to marked disturbances of the

circulation at times which even went as far as collapse after administering this agent. Dr. Bardet reported a case under the charge of Dr. Goldschmidt, of Strasburg, Germany, in which even a small dose would produce general discomfort, dizziness, nausea, and erythema, which was quite general, with a very marked pruritus, which finally resulted in desquamation. No albumin was found at any time in the urine.

Dr. Dalché now makes a second report to the Paris Therapeutical Society, in which he speaks of having observed another case of ulcerating membranous stomatitis due to the administration of this agent. "The patient was a man, sixty-five years of age, arthritic and affected with haemorrhoids and gall-stones, who had never presented any symptoms of intolerance in respect of antipyrin, which he was in the habit of taking frequently. One day, however, after the ingestion of a cachet containing 1 gramme (15.4 grains), of this substance, he developed acute aphthous stomatitis. Subsequently, the ingestion of 1 gramme (15.4 grains), and later of 50 centigrammes (7.7 grains) of antipyrin produced similar, but much more intense, symptoms. At this time, the patient suffered from ulcerating membranous stomatitis, with ulcers on the tongue, lips, and cheeks. The last attack was also associated with a purpuric eruption on the skin, followed by slight ulceration of the scrotum.

"It is worthy of note that these ill-effects did not arise until the general health of the patient began to be impaired. Examination of the urine one day revealed the presence of a small quantity of sugar, but this glycosuria soon disappeared.

"During the last attack of ulcerating membranous stomatitis the urine contained only phosphates and urates in excess, but some time later there were 3.26 grammes (50 grains) of sugar per litre (about 1 quart). There was never any albumin. Renal inadequacy, therefore, does not account for all cases of intoxication by antipyrin." (*The Medical Week*, Vol. V, page 10.)

Dr. A. Vidal, of France, reported early this year a case of exceptional intolerance to this agent on three separate occasions of its administration to relieve violent headaches. (*Gaz. hebdom. des Sciences Méd. de Bordeaux* for 1897, page 51).

Dr. J. Spanoudis, of Port Said, Egypt, discourages its use even in the ordinary antipyretic daily doses of 2.5 to 3 grammes (about 39 to 46 grains) in erysipelas and other infectious diseases where the kidneys are generally affected to some extent, and where it is all the more important not to increase the obstructive action

already existing, even though Dr. J. Foustanos, of the State Hospital of Syra, Greece, firmly believes and reports that it is a specific in erysipelas, as far as he has yet observed.

Cases of poisoning continue to be reported, but they chiefly occur when used by the laity in nostrum and so-called headache remedies. Toxic symptoms have occurred when using this agent in conjunction with calomel, but such ill effects undoubtedly were due chiefly to the incompatibility of the two agents.

In conjunction with arsenous acid given in progressively increasing doses, very gratifying results have been obtained by Dr. A. Marfan, of France, in the treatment of chorea. He claims that this combination gives better results than other agents, but involves the necessity of following his very definite directions. (*La Presse Médicale*, Vol. V, May 29, 1897.)

Dr. Guibert, of France, reports that this agent is one of the most harmless for the suppression of the lacteal secretion. He has been using it for six years, and now makes his report on nineteen cases. As it has been shown that antipyrin is readily eliminated by the kidneys, attention must be paid to the normal action of this organ in order to produce the desired results.

On December 20th last, Dr. C. Modinos, of Alexandria, Egypt, reported his successful treatment of both acute and chronic nephritis with 0.75 to 1.5 grammes (about 12 to 24 grains) of this agent daily. Marked improvement in the general condition of the patients was noticed, and not only a rapid decrease, but often a complete disappearance, of the albumin took place. He explains its action as being anti-toxic to the peculiar toxic principles of this affection.

Dr. Le Goff, of France, claims beneficial results with this agent in pertussis, given with syrup of gooseberries as a flavour and an excess of vichy water. (*Le Progrès Médical*, Vol. II, for 1897, page 72.)

Dr. Rendu, of Paris, France, has found this agent combined with tannin efficient in recurrent epistaxis caused by vascular tumors of the skin or mucous membrane. He uses the following formula:

Antipyrin	.	.	.	0.5 grammes (about 7½ grains)
Tannin	.	.	.	1.0 " (" 15 ")
Powd. sugar	.	.	.	10.0 " (" 154 ")

He recommends the administration of the above several times a day, which he finds will control the bleeding from the very first

day, and completely stop it by the third. (*Gazette des hôpitaux*, Vol. LXIX, page 1312.)

Dr. Santesson, of Stockholm, Sweden, calls attention to his successful use of this agent to assist in the administration of quinine hypodermically when used after severe attacks of malaria. He calls attention to the great need that has always existed for this mode of administration, and alludes to the fact that it had been used in 1894 successfully and quite extensively in a severe epidemic of malaria in Algiers. The formula used was that of Laveran, as follows:

Quinine hydrochlorate	. . . . .	3 parts
Antipyrin	. . . . .	2 "
Distilled water	. . . . .	6 "

This solution permits an injection without pain. Dr. Santesson believes a new salt is formed by this combination, and is so confident of this that he has adopted the new name of chinopyrin.

Antitoxin has lost none of its previous interest and importance with the medical profession. In point of fact, more practitioners are inclined to at least listen to its beneficial results as reported. Final conclusions, however, are not yet in order, although an immense amount of testimony is accumulating, leaning towards its specific action. What has influenced these favourable reports more than all other causes is the approach to more uniformity in the product of the different rival manufacturers and the more or less successful attempts to test and standardise all the products before offering them to the medical profession. Improvements in the manufacture of antitoxin are also being made from time to time. One of the latest reports comes from Dr. Smirnow, through the Imperial Institute of Experimental Medicine at St. Petersburg, Russia. Hitherto, its preparation has necessitated great expense and many months' time, whereas this new method saves in both expense and time. It consists in simply submitting a virulent diphtheria broth culture to electrolytic action, which gives a resulting product of great power and efficiency. A dog weighing from eighteen to twenty pounds subcutaneously inoculated with 0.5 c.c. (about 8 minims) of a virulent broth of this kind generally dies in from two to two and one-half days. If treatment with the new serum is begun even one day after inoculation, only from 3 to 5 c.c. (about 49 to 81 minims) of this new serum will be sufficient to save the animal's life. Little has been heard of this improved

method, however, since its announcement, and it may be that it has not succeeded in a practical way.

The most marked improvement announced, as claimed by Professor Behring, is in now offering an extra potent serum in the dry form, put up in hermetically sealed bottles. It contains no preservative whatever, as the sealing accomplishes its preservation for any length of time. It is very soluble in water, and this solution must be accomplished before administering. This preparation is claimed to be especially valuable for immunising purposes, as the immunity obtained will last about four weeks. Professor Behring now hopes that the few remaining skeptical practitioners will be won over by this evidence of reliability and safety of the improved serum.

There is marked evidence of a commercial rivalry among the manufacturers of this agent, especially in France and Germany, which, it is to be hoped, will not be the cause of an inferior article being introduced. Such a rivalry, if friendly and based on true scientific principles, cannot help accomplishing good results. Therefore there seems to be all the more reason for having some high standard authority to pass upon all products before they are offered for use.

Professors A. Calmette and A. Delarde have, after considerable investigation, offered a new theory in relation to toxins and anti-toxins. They conclude that immunity, natural or acquired, cannot be due to the presence in the serum of a chemical substance having the power to destroy or modify the toxins. "The true existence of a preventive substance in the serum of vaccinated animals remains yet to be proved; the authors' experiments suggest that the preventive power may after all be a physical and not a chemical phenomenon. Thus they have shown that the anti-toxic function is independent of immunity, since the latter can exist in the absence of the former; further, that both natural and acquired immunity results from a special property of the cells. These, according to the conditions of the surrounding mediums and their own composition, yield passively to the influence of the toxins as a bar of soft iron does to that of a magnet. When these conditions change under diverse external influences, such as the tolerance of certain poisons, the functional state of the cells is modified at the same time. This may be compared to the conversion of the soft iron into steel by tempering; the steel can preserve its magnetisation, and transmit it temporarily to other bars of soft iron, or permanently to other bars of steel. The authors

maintain that a similar physical explanation can be offered of the susceptibility or temporary permanent resistance of organisms to infections and intoxications. (*Ann. de l'Institut Pasteur*, Vol. X, page 675.)

Diphtheria and tetanus are the two affections which have been treated most largely by this form of treatment and in which the best results have been attained. As the prevalence of diphtheria is so great, and the mortality so large, especially in children, both abundant opportunities and comparative statistical results have been readily obtained. A very striking report of the prophylaxis of antitoxin in an epidemic of diphtheria is made by a correspondent to the *British Medical Journal* from Rome, Italy, in which he states (Vol. II, for 1897, page 311):

“Dr. Pasani, sanitary officer of Baricella, in the province of Bologna, has published an article in the *Rivista di Igiene e Sanità Pubblica* of July 1st, on an epidemic of diphtheria, which broke out in the above town, which was arrested by preventive injections of the antidiphtherial serum. It states that the outbreak developed amongst a population of 5,500 persons, in the worst possible hygienic and dietetic conditions. The first case occurred towards the end of October, 1896, and fifty-seven others followed. Of the fifty-eight cases, fifty-four were treated with serum procured from the Bologna Antirabic Institute, and there were five deaths, equal to a mortality of 8.6 per cent. From his observations, he believes the serum by itself alone is sufficient to cure the disease, and that even in very young children it is necessary to inject 1,000 I. u., and to repeat it in twenty to twenty-four hours if the local and general symptoms are not improved. The epidemic continued, sometimes lessening, at others increasing, notwithstanding the adoption of severe prophylactic measures—isolation, disinfection, closure of the schools for a time, etc. He, therefore, with the consent and at the expense of the municipal authorities, had recourse to preventive injections on a large scale. These injections were made on four-fifths of the children of the poor, between one and twelve years of age, and the results demonstrated very clearly their value, both as regards the immunising power of the serum and the duration of the immunity.

“When the epidemic was at its height, he inoculated 260 children. From the second day (February 2, 1897), following the injections up to May 15th, when he wrote the article, only two cases of diphtheria had taken place among them. Both cases were very slight; one occurred forty days, and the other two months, after

the injections. On the other hand, fifteen cases of diphtheria and primary croup occurred between February 2d and May 15th among the children not subjected to the preventive treatment. The dose up to two years of age was 100 I. u., from two to eight years, 200 I. u., and from eight to twelve years, 300 I. u. To save time, owing to his having to inoculate such a large number, he injected the serum into the antero-external part of the arm. He sometimes noticed a cutaneous eruption around the inoculated point, and at others a slight oedema with a little pain, which disappeared in a day or two. He had not observed any internal disturbances from the injections."

Again, "In the *Berliner klinische Wochenschrift*, for 1897, page 694, Dr. F. Rauschenbusch describes a most interesting case, in which toxic symptoms followed a prophylactic injection of Behring's antitoxic serum. There were two cases of diphtheria in the doctor's own house, and in order to prevent the extension of the disease to the other members of his household, each one (five in number) was injected with 200 units of antitoxic serum, all the five members being injected from the same bottle, which contained 1,000 units. In four out of the five, there were absolutely no untoward results, but in one of the three children (a perfectly healthy girl) curious symptoms developed very rapidly.

"This child, aged ten years, five minutes after the injection, developed a marked eruption at the seat of injection. This eruption rapidly extended up the thigh and on to the right side of the face. It was accompanied by very great itching, and ten minutes later the whole body, especially the face, was covered with a dark scarlatinal-red rash, and the child fainted. A warm bath relieved the itching, but as soon as the child was taken out it again fainted, and remained in a collapsed condition until it was placed in a horizontal position. The radial pulse could not be felt on either side, and the heart, though regular, was exceedingly weak. The pupils were dilated, and were sluggish. The child was sleepy; it answered slowly, and the skin was cold and pale. The scarlatinal rash soon disappeared, except on the face. Two hours after injection, there was vomiting, after which the general condition of the patient improved; but the heart weakness remained. Eight hours later, there was itching of the hands and feet, both of which, as well as the face, were swollen and oedematous. There was some swelling in the mouth, giving rise to difficulty in swallowing. The condition of the heart continued to improve, but at this period the radial pulse was still almost imperceptible. The urine, of

moderate amount, was of a dark red colour, but it contained no albumin. Next morning, the heart was stronger, and the patient continued to improve.

“Dr. Rauschenbusch, while still believing in the efficacy of Behring’s serum, comes to the conclusion that there must be individual predispositions which make it necessary that care should be exercised in administering this substance. It is interesting to observe, however, that the same girl, two years before, had been injected with 600 units during an attack of diphtheria, and that there had been not the slightest reaction. The two younger children, suffering from diphtheria, also received 600 units, and were not affected in the slightest degree. It is evident from the whole history of this case that, for some reason or other, haemolytic changes had taken place with considerable rapidity. Whether this is due to peculiarities in the blood, to a want of coagulative power, or some similar condition, is at present a matter for careful consideration. This case is of very great interest to the practitioner who has to inject prophylactic doses of serum where diphtheria has obtained a footing in a household. Dr. Rauschenbusch’s only suggestion is that the prophylactic dose should be diminished in amount.”

It would take up entirely too much time and space to rehearse here even short abstracts of the very numerous reports that have been made throughout the year in the treatment of diphtheria alone—mostly in favour of the antitoxin treatment. Every practitioner, by this time, is familiar with the complete report of the American Pediatric Society, which sums up the consensus of opinion of all in this country, except a few who are still skeptical, and, therefore, possibly a general outline of the present state of professional feeling of the whole medical world may well be repeated here, in the words of the editor of the London *Lancet*, as it appears in Vol. I, for 1897, page 1621:

“The testimony in its favour has been very large. It is true, however, that here and there skepticism lingers, and figures have been quoted that seem to tell a different tale. Yet these contrary statements only serve to confirm the general opinion as to its value, for on scrutiny they are deprived of their significance. Thus in a monograph entitled *Die Serum-behandlung der Diphtherie*, which has recently appeared, Dr. F. Ganghöfner, of Prague, Bohemia, after detailing the facts advanced on all sides in support of the claims of the remedy, mentions that adverse opinions have been expressed by Dr. Sorensen, of Copenhagen; Dr. Kohts,

of Strasburg, and Dr. Müller, of Halle. Dr. Ganghöfner, however, points out that in each instance conclusions have been drawn on too slender a basis, and without adequate trial of the serum.

"Dr. Sorenson published two papers on the subject. In the first, he contrasts his experience of fifty-one cases treated with the serum with forty-six not so treated. In each series, the mortality was 33 per cent., but believing that the injections favoured a tendency to haemorrhage, he seems to have used them with great caution, giving only small doses, and often delaying the administration for days. Seeing that the success claimed for antitoxin mainly rests upon its earliest possible administration, and that, too, in ample dose, Professor Sorensen's negative results are not surprising. In a further return, Professor Sorensen records nine deaths in eighty cases treated by the serum, but only five deaths in 140 without serum; but here the fallacy of selection renders the comparison useless, since the serum group contained twice as large a proportion of severe cases as the non-serum group, and, moreover, in eight of the nine fatal cases the serum was not injected until the third to the fifth day.

"Professor Müller's figures from the Halle surgical clinic, showing a mortality of 50 per cent. after tracheotomy amongst cases treated by serum, and of 40 per cent. amongst those not so treated, are also open to the criticism that in three fourths of the former class the injections were delayed until the fourth or fifth day, and in some were of very small amount.

"The figures of Professor Kohts, also based on the mortality after tracheotomy, showed but slight difference between the two classes, only his cases were too few in number to allow of any definite reference. Yet even here the mortality was much lower than the average for the preceding five years. But in all these comparative statistics there lurks the great fallacy due to the selection of cases submitted to antitoxin, some cases being untreated because of their mildness, and others, because the subjects were moribund on admission to hospital. This fallacy has been obviated in the statistics furnished by the medical superintendents of the hospitals of the Metropolitan Asylums Board by contrasting the relative mortality of all cases in the year 1896 (including those in which antitoxin was used, and those in which it was not used) with that obtaining in the year preceding the introduction of the antitoxin treatment. (*London Lancet*, Vol. I, for 1897, page 1564.)

"The results of that comparison will be found in our last issue,

and we may remark that they harmonise with the admitted fact that, as a whole, the death-rate from diphtheria, not only in London, but in all great centres, has fallen since the introduction of the remedy. As regards these statistics of the Metropolitan Asylums Board, attention should be particularly directed to the most striking reduction of mortality effected in those patients coming early under treatment—a fact in favour of the remedial action of antitoxin, which is demonstrated with especial force in the case of post-scarlatinal diphtheria, where it was mostly possible to carry out the administration very early indeed.

“The utility of the treatment does not rest solely upon statistics, which, however carefully compiled, are open to fallacies due to the varied conditions which must of necessity prevail. It depends quite as much on the general consensus of opinion amongst those physicians who have fairly employed the serum that its use is followed by results no whit less certain than those which are ascribed to other drugs believed to have a specific action. Thus, in prescribing antitoxin, the physician feels sure of obtaining results as definite as those which ensue on the administration of quinine in ague, or salicin in rheumatism. These effects consist, in the main, in the cessation of the spread of the diphtheritic membrane, its speedy deliquescence, together with a corresponding diminution in the intensity of the local inflammation. It is probably owing to this striking action of the arrest of the local process that under this treatment fewer cases of laryngeal diphtheria are now operated upon, and that the percentage of recoveries after operation is larger than it was.

“How can this be explained, except on the ground that the antitoxic serum acts directly upon the virus, preventing further mischief, although impotent to remove lesions already established by the poison? Nor can any objection to its use be based on the fact that certain complications seem to have become more frequent, for, if through its agency in certain cases life is prolonged or preserved, it would be in these very cases that one might expect the effects of the original virus to be most manifest. It is gratifying to have the assurance of the medical superintendents of the fever hospitals that, in all their wide experience, they have not met with any effects attributable to the injection itself which were of a nature to cause anxiety. It is true that since its general adoption there have been a few isolated instances of apparent fatal injury, but, according to those who have investigated such cases, they are one and all capable of other explanation. Even in the

case of the most remarkable, and in its circumstances the most painful, of these, which occurred at Berlin last year, it is confidently affirmed that the fatal result must be attributed to cardiac paralysis excited by violent coughing from the inhalation of vomited matters in a susceptible subject, and not to the direct action of the serum or its injection.

“The subject is discussed in Professor Ganghöfner’s monograph, where the grounds for this conclusion are entered into. The case referred to was the more distressing from the fact that the injection was being practised, not for treatment, but for prophylaxis. It is, indeed, remarkable, considering the short time that has elapsed since the method was introduced, and the necessarily tentative nature of its application, that so large an amount of confidence should have been awarded to it. This fact by itself surely testifies to its efficiency, and encourages the hope that, with time and experience, still more favourable results will be obtained.”

Dr. C. Compaired, of Madrid, Spain, reports (*Annal. des Malad. de L’Oreille, du Larynx*, etc., Vol. I, for 1897, page 505) seven cases of ozena treated by hypodermic injections of antidiphtheritic serum.

In regard to the treatment of tetanus by antitoxin, encouraging progress has been made during the past year. The general conclusions reached appear to be those of Dr. Nocard, which he stated at a meeting of the Paris Academy of Medicine on July 20th, last. His evidence proved that a small dose of the highly-virulent dry powder of antitetanic serum was sufficient to immunise a horse against a fatal dose of tetanus toxin. Its success for some years past in veterinary practice has been quite convincing. It has acted as a preventive in 3,100 animals where tetanus was endemic, without a single death. Failure generally occurs if tetanic symptoms have been established, but success is the rule when injected very early in the attacks and previous to the tetanic symptoms. Dr. Nocard finds, however, that the injections should not necessarily be dispensed with in cases of established tetanus, for some success is to be looked for, and, in fact, is the very best method of treating this affection in horses,—the attacks are less numerous and less severe, and if recovery is obtained, convalescence is hastened.

The antitoxin treatment in typhoid fever has not been very encouraging during the past year in this country, and no doubt, therefore, reports have not been numerous. Foreign observers, however, seem disposed to claim remarkably good results from

injections in healthy persons in epidemics of typhoid fever, such as occur in military camps. Definite reports in this direction will be awaited with interest. The latest reports on the subject of serum diagnosis of typhoid fever come from Dr. F. Widal, made at the International Medical Congress, held in Moscow in August last. (*The Medical Week*, Vol. V, page 439.)

As to anti-choleraic inoculations, some progress has been made during the year, especially abroad. The number of cases reported is too few as yet to draw any general conclusions, but a reduction of as much as 20 per cent. in the mortality statistics has been recorded, and gives good evidence that the results are at least not unfavourable.

No doubt Professors T. R. Fraser, of Edinburgh, Scotland, and A. Calmette, of the Pasteur Institute, of Lille, France, are diligently at work on the same subject of the serum treatment of snake bite, as alluded to here last year, but no further very extended reports have been made during the past year. The following is, however, "of interest in being one of the first cases of snake bite treated in India with Professor Calmette's anti-venene serum:

"About 6.30 p. m., on September 21st, a Hindu boy, aged 11, son of a groom, was drawing water from a well, and in returning accidentally stepped on a snake, which bit him on the right foot, the foot being bare at the time. Two men were with him who both saw the snake, but were unable to kill it before it disappeared in the grass. They promptly bound the end of a pugaree tightly round the boy's leg, and, picking him up, ran with him to my quarters. Not more than three minutes elapsed from the time he was bitten until I saw him.

"The typical imprint of a snake bite, with its two deep fang punctures and the crescentic row of small teeth marks between, was clearly seen on the inner side of the right foot. It being 'the hour at which men most do congregate at the club,' no fewer than five medical officers were on the spot in a few moments. I at once injected 8 c. cm. of Calmette's antivenene serum into the subcutaneous cellular tissue of his abdomen. At the same time Surgeon-Major Birt, A. M. S., treated the wounds and their immediate neighbourhood with a hypodermic solution of permanganate of potash, after which they were carefully washed and dressed. The case was then placed under observation and seen from time to time during the evening, but the patient never had a bad symptom, and is now running about as well as ever he was.

"REMARKS.—There is no doubt one weak point in the above case—namely, that the snake was not killed, and that, therefore, there might be an element of doubt as to the nature of its species. The reptile, however, was clearly seen by both men who were with the boy, who gave an accurate description of it, and recognised it as a krait (*bungarus caeruleus*) that most deadly and dangerous Indian snake. The characteristics also of the wounds were clearly those of a bite from a snake with fangs. My own personal observation led me at once unhesitatingly to conclude that the injuries were caused by a poisonous snake, and in this I was borne out by the unanimous opinion of the five medical officers by whom the case was seen, several of them of long and varied experience in India. Taking all these points into consideration, there can, I think, be little doubt that the boy was bitten, and bitten savagely and deeply, by a krait, a bite from which under ordinary circumstances is necessarily fatal."

This case is related by Surgeon-Major S. J. Rennie, of Meerut, India, and will be found in the *British Medical Journal*, Vol. II, for 1896, page 1501.

The treatment of pneumonia with anti-pneumonic serum continues to be advocated by investigators and the further studies of Dr. E. DeRenzi, of Naples, Italy, will be interesting when published. It is to be hoped that they may have been as favourable as his ten reported cases of last year. Those interested in this line of treatment should read the report of a case occurring in the Poplar and Stepney Sick Asylum, just outside of London, England. (*Brit. Med. Journ.*, Vol. I, for 1897, page 973.)

Dr. Weisbecker, of Gedern, Germany, has carried on some interesting experiments with the serum obtained from convalescents after measles, especially children. Three were between nine and fifteen months old. In one case he injected before the rash appeared and obtained a decided modification of the regular course. In four cases of pneumonia complicated with measles, he claims favourable results. (*Zeitsch. für Klin. Med.*, Vol. XXX, page 312.)

Like unsatisfactory results to those reported by Professor Neumann last year have continued to be reported in the use of the serum of animals immune to syphilis when injected in patients suffering from that affection. Professor Doehle, of Cologne, Germany, however, claims to have not only discovered but identified beyond question the specific bacillus producing syphilis. Further reports may be looked for from him.

Dr. Juan de Dios Carrasquilla, of Bogota, Colombia, has continued his experiments with anti-leprous serum alluded to here last year, and now reports on at least one hundred cases of gratifying results. Dr. Pablo Garcia Medina, Secretary of the National Academy of Medicine at Colombia, verifies his results so that statements are now made which are so convincing that they cannot well be neglected. It is urgently recommended that all who have such cases to treat should procure this serum. To facilitate this end, Dr. Albert S. Ashmead, of New York City, has considered the propriety of starting what he proposes to call a "Carrasquilla Institute." He has had several consignments of this serum sent him from Dr. Carrasquilla, and intends to continue such importations. Those interested in this subject will read with interest Dr. Ashmead's letter to the editor of the *Journal of the American Medical Association* (Vol. XXVIII, page 181).

At a meeting of the Paris Academy of Medicine on September 28 last, Dr. H. Hallopeau made a report on his experience with a like serum to that of Dr. Carrasquilla which was not favourable, although he concludes to continue the investigations despite the many difficulties encountered, showing he at least believes there is some prospect of reasonable success in the future.

Dr. J. Olaya Laverde, of Bucadramanga, Colombia, has sent to the Paris Academy of Medicine a long communication on the serum treatment of leprosy. The method which he employs differs from that of the medical man at Bogota, inasmuch as he prepares his animals by means of subcutaneous injections of fluid from leprous tumors, which have just been removed from patients in an active stage of the disease. These animals always experience a well-marked general reaction, which disappears completely at the end of from five to six days. The blood of these animals, drawn when they have fully recovered their health, is collected with antiseptic precautions and injected in the ordinary way; accidents incidental to the operation are unusual and unimportant. On the first injection the patients show a pronounced febrile reaction, with malaise, pain in the back and the abdomen, and sometimes diarrhoea; this reaction commences six hours subsequent to the injection, and after an interval varying from twelve hours to three or six days, according to the case, it terminates in copious perspiration, a general feeling of comfort, and recovery of appetite. The therapeutic results are very marked and extend to all the symptoms. The good effects on the nervous system, for instance, are shown by the disappearance of anaes-

thesia, wandering pains, palsies, and pains in the joints. The improvement in the condition of the mucous membrane is manifested by the renewal of nasal respiration, the disappearance of ozaena, anosmia, and blepharitis, and the healing of conjunctival and corneal ulcers. The results on the skin are that perspiration returns, the hair on the scalp, the chin and the eyebrows grows afresh, extensive ulcers rapidly heal, and leprous nodules are absorbed. The bacilli which could formerly be found with ease in the parts of the skin infiltrated with leprous nodules also disappear. The duration of the treatment is from three months to one year at the most. The good effects observed have been fully maintained in sixty cases up to the present time, and six of the patients may be considered to be cured, as a year has now elapsed since their restoration to health, but time alone will show whether the success obtained is permanent, and whether the majority of the patients will be thoroughly restored to health or only improved. Ordinary therapeutic measures, such as the actual cautery, may be employed at the same time as the serum treatment; the patient's food and general hygiene should also be attended to. The author makes special reference to 'lavages du sang,' by which he means large injections either of normal serum into the cellular tissue or of artificial serum into a vein; these injections seem to be valuable adjuncts to the serum treatment." (*La Semaine Médicale*, Vol. XVI, page 356.)

Cases of ulcerative endocarditis have been treated with serum, and have been recorded. Those interested will find them as follows: By Dr. Harrington Sainsbury, in the London *Lancet*, Vol. II for 1896, page 1079; by Dr. A. E. W. Fox, in the same periodical, Vol. I for 1897, page 520; by Dr. Margaret Pearse, in the same journal, Vol. II for 1897, page 92, and, finally, Dr. J. W. Washbourn, in the same, Vol. II for 1897, page 707. In this latter case, the "antistreptococci serum was used, because it was thought that the case was most probably one of streptococcic infection, although we possessed no bacteriological evidence of the presence of streptococci in the blood."

Dr. Paul Paquin, of St. Louis, Mo., has been one of the most energetic and apparently successful workers in the treatment of tuberculosis with an anti-tubercle serum. At the recent meeting of the American Medical Association in June last, in Philadelphia, Pa., he reported on sixty-seven cases in addition to those previously reported on since his work in this line began in 1894. He concludes as follows:

"This report does not include the numerous cases in which serum was tried in moribunds, or in more favourable cases, for too short a time. Nor does it include a number of cases improved in the last few months by using serum by rectal injection.

"In concluding this report, I wish to say that too much is expected of sero-therapy in tuberculosis, or of any treatment, for that matter. It can never be possible to arrest consumption when the tissues are so destroyed and their generative energies so enfeebled that they are beyond the power of stimulation. It is only in the early stages that one may expect the best results (and in the early stages it is a most efficacious remedy). One great trouble we have to deal with is mixed infection, and this can be reached only by the use of antitoxins prepared specially for the germs producing the complications, assisted occasionally by other measures. Tubercle antitoxin cannot act directly against microbic complications. Furthermore, it should not be forgotten that the destructive process of tuberculosis is so great, so comprehensive, that no means of wise special or general treatment should be spared to assist sero-therapy, or any other special treatment, in the work of repair. Most of them were cases of an experimental character. The cases which I have submitted here have been treated almost exclusively by the use of serum.

"I am fully convinced that no one is warranted to-day in proclaiming the absolute and exclusive curative properties of an exclusive specific alone in tuberculosis of all kinds. Every case must be treated on its merits, considering in each the symptoms, lesions, predispositions, inherited conditions, and the various susceptibilities present. Sero-therapy is nature's remedy, and offers the greatest assurance of benefit in the subjugation of the specific cause or causes, but in most cases, as just stated, it should be supported in its splendid work by such hygienic, dietetic, and medicinal measures as are considered wise for each individual case." (*Journ. Amer. Med. Assoc.*, Vol. XXIX, page 98.)

Dr. E. A. DeSchweinitz, director of the Bureau of Animal Industry, Washington, D. C., also reported his results in the same line as Drs. Maragliano, Babes, Behring, and Paquin are working, at the same Philadelphia meeting of the American Medical Association. He concludes as follows:

"Our experiments lead us to conclude, that while the injections with tuberculin produce in healthy animals a serum containing antitoxic material, the amount of this is small; and that the injection of the live culture is the proper treatment. We cannot agree

with the statements that horses are unsuitable for the work. Mules and donkeys may, perhaps, give quicker results, but horses seem to be entirely satisfactory. At no time have we found that the horse serum produces toxic effects, although these have been noted from the cow serum. If the antitoxic-serum treatment for tuberculosis could be freed for the present from its commercial aspect, and careful systematic experiments continuously conducted in numerous hospitals and sanitariums, this or a similar modified method of treatment could be looked to for good results. When tuberculosis can be uniformly cured in guinea-pigs as certainly as diphtheria, then does the commercial aspect become a fair and legitimate one. In the meantime, the laboratory worker desires the intelligent co-operation of the clinician, who will be desirous not only of curing his patient, but of advancing the theory as well as the application of those principles which, with the expenditure of many years' time, and often at great personal risk, have been made intelligible." (*Journ. Amer. Med. Assoc.*, Vol. XXIX, page 113.)

Much attention has been paid and much interest centered in the attempted serum treatment of the recent outbreak of the bubonic plague in India. A good summary of the investigations made, and the deductions to be drawn, is given in the *British Medical Journal*, Vol. I for 1897, page 1492, and is worth repeating here:

"A striking instance of the value of antitoxic methods of prophylaxis is afforded by the results of Professor Haffkine's inoculations against the bubonic plague in India. On reading the description of his technique, which he has communicated to us, and which is given in full in another column, one cannot help being struck by the roughness of the methods employed, and by the wonderful success that attended them.

"That the introduction into the body of the mixture, which results from the growth of the plague bacillus in a mass chemically so complicated as a mixture of native 'ghee' and bouillon, should cause the inoculated to suffer to an extent about twenty times less than the non-inoculated, living under the same conditions and exposed to the same chances of infection, is indeed a remarkable fact. It would almost seem as if the old definition of a physician, as one who poured substances about which he knew little into the body about which he knew less, were exemplified in the modern scientific therapist. The results of the method, however, would appear to be successful.

"Where, then, are we to look for the explanation of the pro-

cess? How shall we find the exact element among the many upon which success depends? If such striking results have followed and continue to follow the method, how much greater results may we expect to ensue when bacteriologists have succeeded in isolating from the complex mass of proteid and other elements of which such an antitoxic material must be composed, the essential body upon which the result depends? Truly here are vast fields of research, and a good hope that important results may follow the ultimate solution of the puzzle.

“Professor Haffkine prefaces his paper with the remark that the first condition to be fulfilled in carrying out laboratory work on a microbe is to become able to recognise it with certainty, and to distinguish it amongst all others which, in the course of the work, may become associated with it, or substituted for it, and then proceeds to describe in detail the characteristic growth by which the plague bacillus may be unfailingly recognised.

“Here we have an allusion to a difficulty which besets the bacteriologist at every turn, and one which has, perhaps, caused more confusion in an already intricate science than any one of the many difficulties with which the path of the accurate investigator is strewn. Any one who has tried to recognise from the descriptions given in the text-books a bacillus not previously encountered must have felt the great want that exists for differential characteristics. Microscopically, many varieties of bacteria resemble each other closely; in culture they present differences which in many cases are small.

“The most beautiful instance of an accurate series of differential tests between allied organisms is exemplified in Klein’s classical series of distinctions between the *B. coli communis* and *B. typhosus*, a series of differential characteristics which must always remain the type of what is requisite in such cases. It is not too much to say that much of the confusion that exists in bacteriological literature is due to the want of such distinctive reactions. The mode of growth of the plague bacillus described by M. Haffkine seems to be very characteristic, and will apparently enable bacteriologists to recognise it with certainty.

“Having obtained a pure culture, the next process in the preparation of the antitoxic material is to cultivate luxurious crops of bacilli by adding to the nutritive medium abundant quantities of fat freely exposed to the air; the fat used is the native ‘ghee,’ or clarified butter. In the course of a month sufficient growth has formed. The microbes are then killed by heat and the inocula-

tion fluid is ready. The whole process appears to be simple; the results, however, show it to embody the essential elements, for even in the first experiments made at the house of correction at Byculla, out of one hundred and seventy-three persons non-inoculated there were twelve cases and six deaths; while among the inoculated, who numbered one hundred and forty-eight, there were but two cases and no deaths. What this essential element in the process is, it remains for future research to discover, but M. Haffkine is to be congratulated on the large measure of success which has already attended his investigation."

Commissions were sent to India from China, Germany, France, Italy, and, in fact, all the prominent nations, to study this important subject, and they have all returned with independent favourable reports based on separate investigations. Dr. Charles B. Fitzpatrick, of New York city, has published "A Preliminary Note on the Investigation and Preparation of the Antitoxin of the Bubonic Plague." (*N. Y. Med. Journ.*, Vol. LXV, page 490.)

His series of experiments were undertaken in order to investigate, and, if possible, to prepare, this antitoxin, so that the health authorities might be ready for any opportunities to make a practical use of it in this country.

Further prophylactic experiments have been tried by Professor Koch on the production of immunity against the rinderpest in Cape Colony, Africa. National prejudices have been prominent in discrediting his work, not only in the English colonies, where it has been tried, but by the French; however, he has undoubtedly obtained such gratifying results that time only will show the ultimate progress made in this line of treatment. A condensed report of Koch's work will be found in the *British Medical Journal* (Vol. I for 1897, page 683). The editorial comment on this report is repeated here: . . .

"It will be seen that Professor Koch has succeeded in obtaining from 'salted' cattle, or cattle that have recovered from an attack of rinderpest, a serum of low antitoxic value, so low, indeed, that it requires 100 c. cm. of this serum to protect an animal against an inoculation with a small dose of rinderpest blood. Here, again, the immunity is passive and temporary. Such serum, though it cannot be used on a large scale, may nevertheless be useful in certain cases, as, by mixing 20 c. cm. of such serum with virulent rinderpest blood and then injecting the mixture, an immunity equal to that enjoyed by an animal that has recovered

from a natural attack of the disease can be obtained, an immunity that is certainly active, and continues for some time.

“In a former note it was pointed out that Koch had been unable to find Simpson’s bacillus in the bile of cattle that had succumbed to an attack of rinderpest. Working with the bile of such animals, he now finds that a single injection of 10 c. cm. is sufficient to produce a high degree of active immunity, which, however, does not set in until about the tenth day; it is so decided, however, that four weeks after the injection of the bile, 40 c. cm. of active rinderpest blood—a twenty-thousandth part of which is a fatal dose—may be injected. This is a most important statement, and brings the protective inoculation against rinderpest into line with Haffkine’s prophylactic inoculation against the plague. The most noteworthy fact is that every farmer who has a case of rinderpest amongst his stock has at hand a quantity of material with which he may protect such animals as have not contracted the disease, or have not yet been exposed to infection.” (*Brit. Med. Journ.*, Vol. I for 1897, page 673.)

Anusol is one of the newer products offered. It is claimed to be the bismuth salt of iodo-resorcin-sulphuric acid, and is recommended abroad to control hyperaemia when present in the mucous membrane of the rectum and vagina. It has been tried with gratifying results in the form of suppositories in catarrh, fissures, and pruritus of those regions. No definite clinical results are yet reported.

Apolysin—the combination of phenetidin and citric acid—has been little reported upon during the past year. Dr. V. Jez administered it to fifty patients suffering from a dozen or more definite affections, in daily doses of 3 to 7 grammes (46.3 to 108 grains), and concludes that it is quite an indifferent article, possessing no analgesic properties whatever, and slight antipyretic and diuretic effects. (*Wien. klin. Wochensh* for 1896, page 466.)

Argentamin (ethylene-diamin-silver-phosphate)—the silver nitrate substitute—has not received much general attention in the medical world during the past year. The only mention of prominence is by Dr. A. Ascher, of Buda Pesth, Hungary, in the *Deutsch. Med. Zeit.* (Vol. XVIII, page 14), where he records his experience in twenty-two hospital cases of gonorrhoea. Aside from the additional testimony of this number of cases, Dr. Ascher simply repeats and verifies what has previously been claimed.

Argentol is a new antiseptic recently introduced by a German firm. It is a combination of oxy-quinolin and metallic silver. It

is offered as a substitute for actol and itrol as being less stable and therefore more effective when applied to suppurating wounds, for the component parts are each energetic agents when presented to such surfaces. Practically all other silver preparations yield silver oxide when splitting up, whereas this component yields metallic silver in a finely divided state. It is reported to be so readily decomposed that if it is even brought to the temperature of 100° C. (212° F.) in water, finely divided metallic silver is deposited. It has been successfully used in syphilis, gonorrhoea, open wounds, granulations, skin diseases, and other like affections, in the form of a dusting powder, ointment, a mucilage, and emulsion injection—the latter principally in gonorrhoea. It is reported to be non-irritant and non-toxic. More detailed clinical results will no doubt follow later.

Argonin, the bactericide formed by mixing silver nitrate with a combination of sodium and casein, has apparently received more attention during the past year than the year previous. There seems to be a diversity of opinion now, however, as to its efficiency in the treatment of simple urethritis. Dr. J. Jadassohn, of Breslau, Prussia, claims that it is not adapted in these cases. (*Archiv. für Dermat. und Syph.*, Vol. XXXII, page 179.)

Others recommend it. However, all observers who have made use of it admit its marked beneficial effects in both acute and chronic gonorrhoea. When used of the strength of about 2 per cent., it is evidently a rapid and effective gonococcicide. Professor Zydlovitch reports favourably on his thirty-three cases of more or less chronic gonorrhoea, believing argonin superior to all other forms of medication.

Among other observers reporting in this country, two of prominence only will be mentioned: Dr. Frank Trester Smith, of Chattanooga, Tenn., reports on a case of gonorrhoeal ophthalmia with the following conclusions: "This case seems to indicate that argonin can be used safely in the eye; that it is less irritating than nitrate of silver, and from its wonderful effect on the discharge and the development of the gonococci it appears to be the ideal remedy in purulent ophthalmia. Further tests will demonstrate its true value." (*Journ. Amer. Med. Assoc.*, Vol. XXVIII, page 687.)

Dr. H. M. Christian, of Philadelphia, Pa., gives his views on the treatment of gonorrhoea by injections of this agent, drawing these conclusions as to its value:

"1. That it is absolutely unirritating and can be used in solutions from one to ten per cent.

"2. In the great majority of cases it lessens the discharge very rapidly.

"3. Its use is generally followed in a short period by a disappearance of the gonococci.

"4. That this disappearance of the gonococcus is not in all cases permanent; in other words there is in quite a large proportion of cases a distinct tendency to relapse, with reappearance of gonococci.

"5. That it possesses distinct value as a hand injection in the stationary period of the disease, but is of very little benefit in the mucous stage, or stage of decline.

"6. It produced no results in the treatment of chronic anterior urethritis.

"The writer would state that he is still using it in his hospital services as an injection in the stationary stage of the disease, and is very much impressed by the remarkable power the drug seems to possess in so many cases of rapidly diminishing the discharge and causing at least a temporary disappearance of all gonococci.

"Should the price of the drug ever admit of its being used in irrigation of the urethra it may possibly be found to be of still greater value." (*Therap. Gaz.* Vol. XXI, page 447.)

Aristol (annidalin) has lost nothing of its importance and usefulness during the past year. It continues to be quite generally used, but no definite reports have been made, for many surgeons now use it as a routine practice in suppurating wounds of most kinds.

Bananina is a coined name for a new product consisting of "a flour made from the plantain, a vegetable which is well known as a staple article of food in South America. It is said that in many districts of Cuba infants are fed with success on banana flour immediately after being weaned. It is stated to be made from the plantain by a simple process, and one which does not necessitate much handling. After the skin has been separated and the heart extracted the soft pith is artificially dried in ovens, ground and reduced to a fine powder, and having been sifted is ready for the market.

"It is of a white yellowish colour. Under the microscope some black specks may be discerned. It has an agreeable smell, is soft to the touch, and slightly sweetish in taste. Microscopically it is seen to consist entirely of starch, with the exception of a small amount of vegetable fibre and foreign matter. The starch is of a

peculiarly soluble variety, and is rapidly converted by an artificial digestive mixture. The analysis given by the makers is as follows: Water, 10.62; albumin, 3.55; fat, 1.15; carbohydrate, 82.82; phosphoric acid, 0.26; salts, 1.60. From this it is seen that the product is essentially a starch food, and from the fact that the particular variety of starch of which it is composed is very soluble, it will doubtless prove of value where such food is indicated. The presence of an appreciable amount of phosphates adds to its dietetic value. It can be cooked in any of the ways usually employed for this class of material, and its pleasant taste should add to its utility." (*Brit. Med. Journ.*, Vol. II for 1897, page 223.)

Benzacetin (aceto-amido-methyl salicylate) first recommended in the treatment of neuralgia, has received practically no consideration whatever in the current medical literature of the year past.

Benzonaphthol (β -naphthol benzoate) the recommended intestinal antiseptic—has received no attention in the medical literature of the year.

Benzosol (benzoyl guaiacol) has not received much attention in the current medical literature during the year past. Only three articles of prominence are noted, and they appear in the same publication but under different dates: Dr. Kofron, of Cleveland, Ohio, reports a case of a musician, twenty-one years old, affected with intestinal tuberculosis secondary to pulmonary tuberculosis in which marked improvement was obtained by using this agent. The second article was that of Dr. George Frank Butler, of Chicago, Ill., who writes (*The American Therapist*, Vol. V, page 169) simply of his personal experience, and concludes that its most important uses are, "as an intestinal antiseptic, and as a remedy of great value in certain forms of tuberculosis." The third article is by Dr. Mark A. Brown, of Cincinnati, Ohio, who reports (*The American Therapist*, Vol. VI, page 48) his good results in phthisis. Testimony from others is recorded, simply confirming the above results.

Bismal (bismuth methylene-di-gallate) the internal astringent alluded to here last year—has not been heard of in the current medical literature of the year.

Boral (compound of aluminum borate and tartrate), the alleged astringent and bactericide in the diseases of children, has received no attention in the medical world during the year. This name is so much like borol that confusion is surely encouraged by

still continuing this very unwise practice of choosing names so much alike for new agents.

Borol is the short name given to a compound in which either potassium (K) or sodium (Na) joins with boron (B) to replace the two atoms of hydrogen (H) in sulphuric acid (H_2SO_4), giving either of the two formulae: $BKSO_4$ or $BNaSO_4$. It occurs in irregular, colourless, odourless, vitreous fragments, soluble in five times its weight of water. It is recommended by Dr. H. Jäger as having about three times the antiseptic efficiency of carbolic acid. A 2 or 3 per cent. solution rapidly destroys the staphylococcus pyogenes aureus, also the anthrax bacillus and the cholera vibrio. It has already been given internally in torticollis, epidemic cerebro-spinal meningitis, croupous bronchitis, acute septicaemia and erysipelas, but with only moderate results. Given both externally and internally in erysipelas, psoriasis, chilblains, ozena, and diphtheria, it shows about the same success. Little better results have been obtained when used externally in gonorrhoea, burns, contusions, and open wounds. In diphtheria (sprayed), gonorrhoea and ozena a 1 to 2 per cent. solution was used. Internally 10 to 20 drops of a 20 per cent. solution diluted with water five or six times a day is directed for children, and 30 to 50 drops for adults. It should be given to nursing infants midway between the feeding times as it coagulates the milk (*Therap. Wochensch.*, Vol. IV, page 204).

Bromoform is still in prominent use, chiefly in the treatment of pertussis. Poisoning cases unfortunately continue to be reported, more frequently as its use becomes more extended. Dr. W. F. Cheney, of San Francisco, Cal., reports a case of interest in this connection, and may serve as a caution to those who are favourable to its use. A mixture containing this agent was given to a girl three years of age for pertussis. Two drops were calculated to be in each dose given, and they were to be taken every four hours. After she had taken the mixture quite regularly for about a week, always with good effect, she complained of the last dose about three hours after its administration. Her feelings were those of dizziness, and she speedily fell to the floor powerless. Her head dropped forward apparently without control. She was conscious and could talk, but her speech was thick and unintelligible. She acted as if she was intoxicated. She talked in a jolly way but disconnectedly and laughed without a cause. Very soon she vomited profusely, and then became unconscious. Her face was of good colour, her pupils markedly contracted, her respira-

tions were 20 and regular and were not stertorous, her pulse was 105 and regular but weak. Her breath smelled strongly of chloroform. One one-hundred-and-twentieth of a grain of strychnine was given hypodermically, after which she slept soundly for three hours, and was perfectly rational after awaking. Dr. Cheney adds that he has prescribed this agent frequently in a solution of alcohol, sugar, and water without any ill-effects until this occasion. In the future he says he will administer the agent dropped on sugar, for in spite of all devices it appears to precipitate when given in a mixture.

Camphor is becoming scarce in China, Japan, and Formosa, and therefore it is specially interesting to learn that the United States Agricultural Department is looking into the subject of a prospective home industry. The division of botany of that department has during the year issued its Circular No. 12 on the Camphor Tree. The distribution of this tree in this country is confined to the whole state of Florida, a strip along the Gulf of Mexico, to the coast of California south of San Francisco, limited areas in southern Arizona and along the Rio Grande river. It is reported to be a hardy tree, needing practically no cultivation, and is quite ornamental. It yields its gum from the twigs and leaves, which latter are so abundant that judicious pruning, from time to time, will furnish an abundant supply of gum and yet will neither retard its normal growth nor spoil its symmetry and attractive appearance.

The only mention specially of note to the medical practitioner in the current medical literature of the year is the announcement of Dr. A. Herrgott that 200 milligrammes (about 3 grains) of camphor, in the form of a cachet, given three times daily for three consecutive days produces a remarkable diminution in the secretion of milk. His experience is based on thirty cases. After making use of antipyrin and the other usual anti-galactagogues with much dissatisfaction, he was led to try camphor by the encouraging results of Professor Kiener on milch cows and other animals. (*Revue de Thérap. Médico-Chirurg.*, Vol. LXIV, page 280.)

An artificially prepared form of camphor called "oxycamphor" has been experimented with both physiologically and chemically, and is reported to give promise in relieving dyspnoea brought on by certain conditions. It is prepared by reducing camphor-orthoquinon by means of powdered zinc and acid in a way which would be of little interest to describe here on account of its complicated

organic reactions, but chemically considered it consists simply of one molecule of hydroxyl (HO) replacing one molecule of hydrogen (H) in the formula of camphor.

"It is a white, crystalline powder with a melting point of about 204°C. It is soluble in cold water to the extent of 2 per cent., but more so in hot water, and readily in all organic menstrua with the exception of ligrosin, the solution in water having a slightly hot and bitter taste. Solutions of albumin are not affected, but myosin is precipitated in flocculi. Oxycamphor is inimical to low forms of organic life, bacterial growth, putrescence, and fermentation being markedly retarded by a 0.1 per cent. solution and entirely stopped by a 0.5 per cent. solution. When added directly to blood oxycamphor causes the haemoglobin to become converted into methaemoglobin, and otherwise appears to hinder the absorption of oxygen. When injected into the lymph sac of a frog oxycamphor behaves like camphor in paralysing the muscular coat by acting on the motor nerve endings; the action of the two drugs on the heart, however, is dissimilar, inasmuch as camphor excites the movements when they have been arrested by muscarin, not only when applied by intravenous injection, but also when a dilute solution is sprinkled on the organ, so that it cannot cause coagulation of the myosin; oxycamphor, on the other hand, however applied, causes retardation, or even actual arrest, of the frog's heart. In warm-blooded animals the difference in the action of the two drugs is even more remarkable, camphor producing in large doses mental excitement and rapid respiration from its irritant action on the fourth ventricle; whereas when 0.25 gramme is given to a dog subcutaneously or a gramme by the mouth the breathing becomes quieter, more regular, shallower, and very much slower. When 0.025 gramme is introduced into a vein the slowing of the respiration is very soon followed by its entire cessation, showing that the drug acts upon the respiratory center. The vaso-motor center is not affected, except secondarily through the respiration. Numerous experiments have shown that even long-continued and considerable doses do not set up any by-effects in other organs, so that oxycamphor would seem likely to prove a valuable therapeutic agent in dyspnoea due to circulatory disturbance. Ewald and Kuttner have made some trials with it, and have obtained results which are decidedly encouraging. They consider the dose to be from 7 grains to 15, and the quantity per diem from 30 to 45 grains." (London *Lancet*, Vol. II for 1897, page 404.)

Cascara Sagrada and its officinal preparations continue to be

experimented with to mask or counteract the disagreeable taste, and yet not alter its efficiency. Bitterless preparations are at present offered of varying efficiency, and now another is presented by an English pharmacist, Mr. L. C. Urban, who claims to obtain a palatable and aromatic fluid extract of cascara possessing marked cathartic properties, by thoroughly mixing

Freshly slaked lime	. . . . .	100 Gm.
Ground cascara sagrada	. . . . .	1000 "
Ground liquorice root	. . . . .	150 "

then kneading the mixture with 1000 Cc. water. Macerate for ten or twelve hours and then dry at 40° to 50°C. (104° to 122°F.) Next moisten with 400 Cc. of the following menstruum:

Alcohol	. . . . .	500 Cc.
Glycerin	. . . . .	250 "
Water	. . . . .	250 "

Pack a percolator and exhaust with this menstruum. Reserve the first 850 Cc of the percolate, and evaporate the remainder to a syrupy consistence. Add the latter to the reserved portion together with 12 Cc. of compound spirit of orange and make up the whole to 1000 Cc. with dilute alcohol.

Chinaphtol is a new intestinal antiseptic prepared by Dr. E. Riegler, of Jassy, Roumania, by combining quinine and β -naphthol—in full it is quinine β -naphthol- α -mono-sulphonate. It is a crystalline, yellow, bitter powder, insoluble in cold but slightly soluble in hot water and alcohol. It is not acted upon by acids, but alkalies split the base quinine from the β -naphthol sulphonic acid. This reaction is supposed to occur in the intestines, having passed through the stomach unaltered. It is strongly recommended in cases of typhoid fever, both of hospital and private practice, in dysentery, intestinal tuberculosis and in acute articular rheumatism (two successful cases are recorded). If the temperature runs over 40°C. (104°F.) 500 milligrammes (7.7 grains) is stated as the proper dose given frequently—as many as ten doses during the day. With a more moderate temperature, 100 to 130 milligrammes (about 1.5 to 2 grains) doses are sufficient (*Wiener Med. Blätter*, Vol. XIX, page 739).

Chinosol, the new antiseptic, disinfectant, deodoriser, and bactericide of last year, still receives prominent attention. Besides those observers mentioned last year, others have investigated its valuable properties. Mr. A. A. Bonnema, of Apeldoorn, Holland,

is fully convinced that it possesses antiseptic properties and practically little toxic effects. It retards the decomposition of meat, checks both alcoholic and lactic acid fermentation, hinders the conversion of albuminous bodies into peptones, and deters the coagulation of albumin. The results of his experiments on animals will be instructive to those interested in this agent. (*Therap. Monatsh.*, Vol. X, page 663.)

Dr. H. Ostermann, of Hamburg, Germany, has made good use of this agent in parenchymatous haemorrhages of the vagina and perinaeum, and in other gynaecological operations, as well as in obstetrical practice—as an excellent bactericide. (*Therap. Monatsh.*, Vol. X, page 154.)

All the evidences go to show its far greater activity than corrosive sublimate and carbolic acid. It is now claimed to be chemically potassium oxy-quinolin-sulphonate.

A striking proof of its deodourising property comes from an account of its effect at an English Kennel Club's dog show recently held:

“As a rule, dogs object to disinfectants which have an odour, but they had none to chinosol (which is almost odourless), and the committee reported that the chinosol was quite successful in keeping down the bad smell which invariably arises where a lot of dogs are kept together. The disinfectant is now offered in two new forms—(1) crude chinosol powder F, which is put up in a tin sufficient to make one gallon disinfecting solution, which bulk for bulk is stronger than carbolic acid; (2) chinosol disinfecting powder, a very light powder, which meets Professor Tichborne's essential—viz., capability of floating on water. Three new soaps are also introduced—(a) medicinal, containing 5 per cent. of chinosol; (b) veterinary, or dog soap, 3 per cent.; and (c) toilet, 2 per cent. These soaps are made from a superfatted, milled basis, without perfume, yet they have a pleasant odour owing to the chinosol, and are equally pleasant to use.” (*Chem. and Drug.*, Vol. L, page 882.)

Mr. Percy Dunn, of West London Hospital, England, reports that, being encouraged by the results of previous investigators, he was led to test the properties of this agent and with very gratifying results, in which he verified all the previous claims—the greatest advantage, he claims, being its applicability as an *antiseptic for everything*. (*Med. Press and Circ.* of Dublin, Vol. CXIV, page 453.)

Chloralose (anhydro-glucosyl-chloral)—the hypnotic—is still

largely used, and appears to have established itself permanently. When this stage is reached with a new agent, there naturally is less and less comment made in the current medical literature, unless either some phenomenally favourable or bad results are obtained. Only two articles of prominence have appeared during the year. Dr. James Tyson, of Philadelphia, Pa., publishes his accumulated results (*Univ. Med. Mag.*, Vol. IX, page 153) after being induced to try it on a patient with the most obstinate insomnia, for he had used ineffectively sulphonal, chloralamide, chloral, trional, and paraldehyde. After administering 650 milligrammes (about 10 grains) at bedtime, he reports the effect as magical. His account of his cases is interesting and instructive, for he also alludes to disadvantages and some ill effects. He concludes that this agent is undoubtedly best adapted to cases of simple insomnia, since it is not, in any high degree at least, an analgesic.

Dr. S. Leon Gans, of Philadelphia, Pa., writes (*The Philadelphia Polyclinic*, Vol. VI, page 182) on "Chloralose; with a Report of Two Cases of Untoward Effects."

Chlorobrom (equal parts of chloralamid and potassium bromide) is still advised by some practitioners as a prophylactic in seasickness, but the preliminary directions continue to be prerequisite to success, and, therefore, the conclusion may still be drawn that such aperient preparation of the traveler may alone accomplish the desired result. Dr. M. Charteris, of Glasgow, Scotland, continues to urge the use of this agent (*The London Lancet*, Vol. I for 1897, page 1146), but prescribes the same preparation as has always been found necessary.

Chlor-phenols (mono- and para-chlorphenol) have received little attention in the current medical literature of the year. The only mention of any note was that of Dr. Barbe, at a meeting of the Paris Society of Dermatology and Syphilography, held on March 11 last, when he reported his experiments in the treatment of lupus, as follows:

"At the Dermatological Clinique of the Saint-Antoine Hospital, I have experimented in several cases of lupus with chlorphenol in the form of 1 part of mono-chlorphenol to 5 parts of alcohol. The results of this treatment were very satisfactory, especially in a case of lupus vulgaris of the face of such extent that it was almost out of the question, in the beginning at any rate, to employ the galvanocautery, scarification, or caustics. The chlorphenol solution was applied with a brush every other day for several months. At the end of five months there was marked improvement; at pres-

ent, a network of non-projecting scars is seen everywhere on the face, especially on the cheek. There still remain several small patches of lupus, to which I propose ultimately to apply the galvanocautery, if the chlorphenol should not cause them to disappear." (*Medical Week*, Vol. 5, page 130.)

Cinnamon has of course been long known as an aromatic, and of great value as a condiment, corrective, and adjuvant. It is largely used particularly in the form of cinnamon oil to mask disagreeable odours and tastes in prescribing. It has long been thought by some as of much service either alone or conjoined with other medicinal preparations in obstetrical practice.

Within the last year Dr. J. Hilton Thompson, of Pendlebury, England, has published his observations on the use of the oil in the treatment of consumption. (*Brit. Med. Journ.*, Vol. II for 1896, page 1374.) He says:

"My attention was first drawn to the essential oils through reading a paper by M. Chamberland, published in 1887. It appeared to me that if the oil of cinnamon possessed strong antiseptic properties, it was a drug likely to be of service in the treatment of pulmonary tuberculosis if used as an inhalation.

"I first used the drug as an inhalation in cases of tuberculous phthisis in 1892. I found the patients liked the smell and taste of the oil; it caused no irritation of the air passages, and did not interfere with the appetite; the progress of the disease was influenced favourably. My interest was further aroused in 1893 by a paper by Dr. Lucas-Championnière. Since then I have regularly prescribed inhalation of the *oleum cinnamoni ver.* in cases of consumption."

He then gives abstracts of "five cases, picked because they all had a well-marked phthisical family history, and were, moreover, treated under very favourable conditions. I felt that if in cases of this kind a favourable result could be achieved, the result would be still better when the family history and conditions of life were less bad."

He closes by giving the advantages as follows: "That oil of cinnamon, when used as an inhalation in certain stages of consumption, affects injuriously tubercle bacilli, is, I think, rendered probable by the very remarkable way in which in the above cases, the organism diminished in numbers or disappeared from the sputum in a comparatively short time after commencing treatment. Also by the tendency for the disease to relapse when inhalation was discontinued. It appears probable that the oil of

cinnamon tends to cure consumption in two ways: First, in the very early cases of catarrhal phthisis, by so directly affecting the bacilli as to stop their growth; and, secondly, in cases that are rather further advanced, by only allowing organisms incapable of growth to pass along the bronchi, and thus prevent the infection of fresh lobules. In this way the disease may be limited to a small area, where it can be dealt with by the vital processes of the body, and cut off from the system by the formation of fibrous tissue, and so cease to be an immediate source of danger. Besides the five cases abstracted, the drug was tried in the more advanced stages of the disease, but as might be expected, without any benefit.

"An interesting feature of the above cases was the order in which the symptoms subsided. The expectoration and the cough were the first to improve, then the temperature tended to the normal, and finally the weight began to increase. These favourable changes in the symptoms were accompanied by a gradual diminution in the number of tubercle bacilli in the sputum.

FORM OF INHALER.

"With regard to the form of inhaler used, I found that those in ordinary use served the purpose very well. If the patient were in an early stage of the disease, I endeavoured to persuade him to use an inhaler that would cover both the nose and the mouth, but in the later stages, when there was shortness of breath, an inhaler covering the mouth only was used. I found that in the early stages of the disease, particularly, the patients liked the smell and taste of the cinnamon; they could use it most of the day and also at night with very little discomfort. It was also interesting to note that the continued inhalation of the vapour caused no irritation of the buccal cavity or of the air passages, and that no constitutional effects were produced.

"Of course my experience with the oil is comparatively limited, but, so far as it goes, I have found the oil of cinnamon to have more points in its favour, when used as an inhalation in the early stages of consumption, than the drugs that hitherto have been administered in this way and for similar objects."

On April 19th, last, Dr. J. Carne Ross, of Manchester, England, wrote to the *British Medical Journal*, (Vol. I for 1897, page 1130), as follows:

"In the article on 'Scarlet Fever,' in the second volume of Pro-

fessor Clifford Allbutt's *System of Medicine*, recently reviewed in the *British Medical Journal*, at page 173, while dealing with the complications of that disease, the writer says:

“ ‘The treatment of the recognised complications of scarlet fever is important. During recent months, while testing upon a series of cases the value of decoction of cinnamon,—for which drug an abortive action had been claimed by Dr. Carne Ross in cases which could be brought under treatment at a sufficiently early date—I was surprised to find a considerable reduction in the incidence of some of the more common complications of the disease. Indeed, in a series of two hundred consecutive cases which were put under this treatment within twenty-four hours of the appearance of the rash, the incidence of adenitis, rheumatism, nephritis, and albuminuria was found to be about 50 per cent. below the average. The general death-rate, however, showed no reduction.’

“ ‘Whether rightly or wrongly, the complications of scarlet fever are greatly dreaded by the public at large, and a reduction of 50 per cent. in the incidence of these complications, following on the administration of cinnamon, is so fairly satisfactory a result, as I hope, to justify me in asking you to allow me space in your columns to describe my method of treatment; and also to state, as briefly as I can, the general theory on which that treatment is based. Vaccination, which attempts to sterilise a patient against some disease by itself giving the disease in some altered form, suggested to my mind, some years ago, that it might also, perhaps, be possible, if you got a patient very early in any disease of microbic origin,—so early that the microbe had not time to lay down a large cellar of ptomaines, if I may be allowed such an expression—that at this period of the disease it might be possible so to saturate the patient with some drug that had no selective action, and was absolutely non-poisonous, and could therefore be employed in enormous quantities, that he should practically become tanned or sterilised; and that if this could be effected, then possibly the microbe would cease to flourish, and if the microbe ceased to flourish, the disease might in consequence run a mild course. It seemed to me that, if successful, this method would have this advantage over inoculation, that it would be absolutely devoid of danger, and would possibly be equally applicable to any microbic disease.

“ ‘It is unnecessary to explain here why I elected to employ cinnamon, or why I took twenty-four hours from the onset of a dis-

ease as a time limit, and determined not to experiment on any cases where illness had existed for a longer period.

"Having experimented on a certain number of cases of influenza, measles, and scarlet fever, and my results seeming to fulfil my expectations, I three years ago laid my views and the results I seemed to have obtained before the late Dr. John Syer Bristowe, whom I had the happiness and privilege to number in the list of my personal friends. Dr. Bristowe, in reply, informed me that, as far as he was aware, the line of inquiry I was pursuing was entirely new, and that the results I appeared to have attained, he considered, demanded investigation, and that he had written to Dr. Caiger requesting him to carry out a series of experiments, to test the value of my work, at Stockwell Fever Hospital. This Dr. Caiger has done, and the result is stated above; and I desire to take this opportunity of expressing my deep sense of the obligation I am under to Dr. Caiger for his kindness in thus carrying out Dr. Bristowe's suggestion.

"With regard to these experiments, however, I would point out that the conditions met with at a fever hospital make it impossible to carry out the treatment perfectly, for patients rarely come under observation at such institutions till they have been ill for a good many hours, and, though a reduction of 50 per cent. in the incidence of the complications of scarlet fever above named is a satisfactory result, still, judging from cases of scarlet treated within the hours from the onset of disease, and also judging by analogy from what I have seen in cases of influenza treated within five hours from the onset of the disease as compared with those treated where twenty-four hours from the onset had elapsed, I believe it will be found that in camps, or in schools where careful supervision obtains, and where patients consequently might be subjected to treatment almost immediately after the onset of the first rigour; that a much better result than a reduction of 50 per cent. in the incidence of adenitis, rheumatism, nephritis, and albuminuria might be looked for, though that reduction for the present is good enough as it stands.

"I elect to stand or fall by the results of my treatment in scarlet fever, and, therefore, I refrain from speaking of the satisfactory results I seemed to have obtained in the treatment, by cinnamon, of measles and influenza; but with regard to the latter disease, I would merely say that during the last four years, I have never had occasion to pay more than four visits to any patient suffering from influenza who was subjected to treatment within twenty hours

from the onset of the disease, and in not a single case have any complications occurred. The treatment is perfectly simple. I give half an ounce of decoction of cinnamon every hour for twenty-four hours; at the expiration of this period, the same dose is repeated every two hours till the temperature falls to normal; when the temperature has fallen to normal, the same dose is repeated four times daily for three days.

"If there is any sore throat, gargle or swab the throat every two or three hours with decoction of cinnamon; in children, the dose to be reduced according to age, but the same method of administration to be observed."

He prescribes the method of its preparation as follows:

"A pound of Ceylon stick cinnamon in a sufficiency of water *in vacuo*, to be raised to 180° and kept there for a time, to be then slowly boiled till the fluid is reduced to a pint and a quarter; pour off without straining; 10 per cent. of glycerin being added, the preparation will keep for months."

Citrophen (phenetidin citrate) has not received much attention during the past year. The only prominent mention is that of Dr. E. Homberger in the *Nouveaux Remèdes* for December 8th last, in which he states that he has found that 500 milligrammes (7.7 grains) rapidly reduces the temperature in tuberculosis without any secondary inconveniences. Also such a dose given four times in twenty-four hours has produced excellent results in acute rheumatism and neuralgia. It promotes the appetite and is agreeable in taste and odour.

Coca and its alkaloid have become more important to the surgeon as years have gone by, and it is interesting to read a report upon it from its native country. The following is quoted directly from Peru in *The Monthly Bulletin* of the Bureau of the American Republics issued at Washington, D. C. (Vol. IV, page 1121):

"Prior to the discovery of cocaine and its wonderful anaesthetic properties which promoted the development of the export of coca, its consumption was limited to the demand from a few provinces in the neighborhood of mining districts, where nothing can be accomplished without it, for, when it fails, the labourers refuse to work. It is, therefore, an indispensable article for the exploitation of the mines of Peru. Thus we see, that in order to work the mines of Hualgayoc, it is necessary to take there coca cultivated at Cajabamba and Huamalcucho, situated on the banks of the Marañon river.

"Twenty years ago the culture of coca was limited to the localities most favoured by the climate and the low price of labour. In the province of Otuzco it was cultivated on a large scale, only on the farms of Choquisongo and Saniumas, which supplied the local consumption and that of the mining districts of Salpo and Sayapullo. But an important change has since taken place in that province which is, to-day, the greatest producer in the north of Peru, exceeding Huamacho and Cajabamba combined, in quantity and quality, notwithstanding the fact that most of the trees are young and do not yield a full crop; that is to say, they do not produce as yet a quintal per thousand plants, as is the case with those over six years old. This quantity is the average of the crop per year."

A table follows showing the actual and approximate production of the one province of Otuzco and the number of plants there.

Cosaprin is the name given to the most recent antipyretic. It is prepared in Basle, Switzerland, by Dr. P. Schwarz. It is chemically closely allied to acetanilid, but differs from it in being readily soluble in water and practically non-toxic. It is described as being simply a white crystalline mass, and Dr. Schwarz gives no intimation of the dose. Such meagre data are of little practical use at this time.

Creolin (liquor antisepticus)—1 part resin soap and 2 parts crude carbolic acid, 20 per cent.—has not been alluded to in the current medical literature of the year, although undoubtedly it is still in use.

Creosotal (so-called creosote carbonate) has been little heard of during the past year except what has been furnished by the firm advertising it. The current medical literature has noted practically nothing.

Creosote has been used and commented upon considerably during the year. The attempts to avoid disarranging the digestion and to make it palatable have been quite a study. Success has not yet been completely attained. Cod-liver oil, castor oil, and various forms of prescription have been extolled. A clear solution is now reported to have been obtained by mixing equal parts of creosote, castor oil, and alcohol in cod-liver oil. The following emulsion has been recommended as being the best method of exhibiting this agent, especially in children with irritable stomachs:

Beechwood creosote . . .	48 to 126 minims
Wintergreen oil . . .	10 "

Acacia	3 grammes (46.3 grains)
Glycerin	15 “ (231.5 “)
Cod-liver oil	up to 175 “ (about 6 ounces)

of which the dose is 5 grammes (one teaspoonful) one hour after each meal.

Dr. August Hock, of Vienna, Austria, not only recommends cod-liver oil according to the following formula in the treatment of pulmonary tuberculosis in children, but in the persistent catarrhal sequela following measles and whooping cough:

Creosote	1.00 gramme (15.4 grains)
Cod-liver oil	100.00 grammes (about 3 ounces)
Saccharin	0.05 “ ($\frac{1}{3}$ of a grain)

The daily dose is 10 to 45 grammes (2 teaspoonfuls) according to age, given with the meals. (*Wien. Med. Blätter*, Vol. XIX, page 773.)

Dr. Kopp, of Lyons, France, recommends (*Lyon Médical*, Vol. LXXXIV, page 354) the following formula made up in the form of wafers:

Beechwood creosote	1 gramme (15.4 grains)
Gum benzoin	1 “ (15.4 “)
Powdered vegetable charcoal	6 “ (92.6 “)

Triturate the benzoin to a No. 80 powder with the creosote, adding the charcoal by degrees until the whole is uniformly triturated. The mixture may then be divided up into five or ten wafers, which is well borne by the stomach.

Professors Romeyer and Testevin have advised a new form of exhibiting this agent containing 80 per cent. of it, and have called it “creso-magnesol” which is well suited to make up into pills. Its preparation is as follows:

Caustic potassa	20 parts
Water	10 “
Beechwood creosote	800 “
Freshly calcined magnesia	170 “

The potassa is dissolved in the water and the creosote gradually added and made into an emulsion, after which the magnesia is intimately worked in. This mass darkens in colour and is allowed to stand thirty-six hours, when it is suitable for making up into pills. Honey may be added to the mass later when it becomes so hard that it can be powdered.

Creosote valerianate, called by the short name of "eosote," still continues to be a form of exhibiting this agent preferable to many for advantages claimed. Dr. Frank Woodbury, of Philadelphia, Pa., read a "Note on Two Creosote Compounds: Creosote Valerianate and Guaicol Valerianate," before the Section of Materia Medica, Pharmacy, and Therapeutics at the Philadelphia meeting of the American Medical Association on June 3d last. (*Journ. of Amer. Med. Association*, Vol. XXIX, page 465.)

Creosote phosphate has been strongly recommended, and it is claimed that large doses are well tolerated and without showing any toxic effects.

Dr. Levy, of Paris, France, recommends (*Journ. de Méd. de Paris*, Vol. XVII for March 17, 1897), among the formulas, the following form of gargle:

Beechwood creosote	8 drops
Tinct. of myrrh	60 grammes (about 2 ounces)
Glycerin	60 " (" 2 ")
Water	120 " (" 4 ")

This has given him good results in follicular tonsillitis.

The following mixture is recommended by Dr. J. Molle, of Aubenas, France, to be given in 30-drop doses in a small quantity of milk, daily by the rectum, to be increased up to 5 or 10 grammes (1 to 2 teaspoonfuls):

Eucalyptol	5.0 grammes (77.2 grains)
Tinct. of benzoin	25.0 " (385.8 ")
Balsam of copaiba	40.0 " (617.6 ")
Creosote	12.5 " (199.5 ")
Sweet almond oil	17.5 " (270.0 ")

He has had excellent results with this mixture in bronchiectasis in children. (*Le Semaine Médicale*, Vol. XVII, page 196.)

The following paste is recommended by Dr. P. J. Unna, of Hamburg, Germany, in the treatment of lupus:

Salicylic acid	10 grammes (154.3 grains)
Creosote	20 " (308.6 ")
Simple cerate	15 " (231.5 ")
White wax	5 " (77.2 ")

For hypodermic use in the treatment of tuberculosis, the following formula is recommended:

Beechwood creosote	25.0 grammes (	385.8 grains)
Camphor	15.5 “ (	240.0 “)
Aristol	9.5 “ (	145.0 “)
Eucalyptol	30.0 “ (	463.0 “)
Sterilised neat's-foot oil up to	250.0 “	(about 8½ ounces)

Dr. Theodor Zangger, of Zürich, Switzerland, has published his experience (*Correspondenz-blatt für Schweizer-Aerzte*, Vol. XXVII, page 361) in the treatment of gastric troubles, particularly infantile gastro-enteritis, with small doses of this agent. He refutes the claim that the larger the dose, the better the result, particularly in phthisis, for his experience, as well as others, goes to show that often the best results are obtained with minimum doses. He claims the small doses simply act beneficially on the gastric digestion, in putting it in a better condition to do its work in a normal way, and thereby improve the nourishment of the whole system. He suggests the following formula:

Beechwood creosote	3 drops
Alcohol	1 gramme (15.4 grains)
Distilled water up to	100 grammes (about 3 ounces)
Or a mucilage up to	100 “ (“ 3 “)

five grammes (1 teaspoonful) to be given to children, and 15 grammes (1 tablespoonful) to adults, before each meal. . . .

“Black coffee or mint tea may be employed, if necessary, to disguise the taste. Where infantile diarrhoea exists without vomiting, he has often found creosote valuable. In the milder forms of the vomiting of pregnancy, small doses of creosote have always produced an improvement, and he thinks that even in severe cases a trial of the treatment should be made.”

Dr. Peter Kaatzer, of Rehburg, Prussia, recommended last year (*Therap. Monatsh.*, Vol. X, page 265) an extract of coffee as a corrective of the taste and smell of creosote proper in the treatment of pulmonary tuberculosis, and it may be well to just make this mention here so that it may be referred to if desired. He finds this form of administration far preferable to pills, capsules, or any of the compound forms.

Dr. James K. Crook, of New York city, contributed an article to the section on general medicine of the Second Pan-American Medical Congress, held in the city of Mexico, on November 18th, last, on “The Present Status of Creosote in the Treatment of Pulmonary Tuberculosis, with an Analytical Review of Forty-five

Recent Cases" (*N. Y. Med. Record*, Vol. LI, page 433), in which he concludes:

"The foregoing review of the literature of creosote, together with his personal experience with the remedy, leads the author to formulate the following conclusions:

"1. Although the human race continues to sicken and die of pulmonary tuberculosis, it is the consentaneous voice of the medical profession, as shown by reports gathered from all parts of the world, that we have in creosote a remedy capable of arresting a certain percentage of cases.

"2. This drug should therefore be administered carefully, systematically, and continuously in every case of consumption, provided it is well tolerated and there is no contraindication or idiosyncrasy as to its action."

Professor Thoma, of Geneva, Switzerland, has published an article on "Creosote in the Treatment of Pleuro-Peritoneal Tuberculosis in Children," in which he advocates his treatment to avoid the customary laparotomy, and concludes as follows:

"Of course it is expedient to generalise from two cases, especially as these children were not very ill and were treated promptly; but, keeping in mind the comparatively short duration of the treatment, and the necessity for preserving the appetite and the digestive functions as unimpaired as possible, it seems to me that enemata of cod-liver oil and creosote are well tolerated, and give good results." (*London Lancet*, Vol. I for 1897, page 159.)

Dr. Angelo Casati, of Camerata Picena, Italy (*Gazz. degli. Osped. e delle Clin.*, first half of Vol. XVIII, page 463), reports that he has found creosote to be not only an antiseptic against the pneumococci, but a stimulant to the heart and nerves. His results were obtained from treating some twenty-six cases of acute pneumonia, during a serious epidemic of that affection. He only records the details of one case,—a man of seventy years of age, who recovered, after beginning the treatment on the third day of the attack. The other cases were treated either with creosote alone, or conjoined with digitalis or caffein, in small doses. In giving it alone, he used the following prescription:

Beechwood creosote	1 part
Tinct. of gentian	2 parts

given with a little wine, in doses from 25 to 150 drops a day. He concluded that those cases receiving simply the creosote and gen-

tian, recovered more rapidly and completely than those treated with the addition of the digitalis or caffein.

Dr. Schoull, of France, reports what he considers to be perfect results obtained by creosote enemata in the treatment of bronchopneumonia. This has been his practice since 1893. Although agreeing with Dr. Casati in the main, Dr. Schoull dissents from his mode of administration, for he does not approve of the large doses which seem to be necessary. The stomach, in his observation, does not tolerate such doses, and an intolerance and gastric derangement occurs very early. The intestines, however, do show a remarkable tolerance to large doses, even to as much as 4 grammes (61.7 grains), thus proving the advantage of the enemata form of administration.

Dr. York Moore, of Stony Hill, Island of Jamaica, West Indies, writes to the *British Medical Journal* (Vol. I for 1897, page 1332) on his success in the treatment of malaria by creosote combined with quinine, as follows:

"On former occasions communications have appeared in the *British Medical Journal* advocating the use of creosote rubbed into the axilla, and quinine administered in suppositories in cases of malarial fever. From the results I have obtained I am inclined to believe that very satisfactory effects may often be secured by a combination of these two treatments. I have frequently confirmed Surgeon-Lieutenant Rogers's statement that within two hours of the epidermic application of creosote the temperature drops very considerably, in some cases becoming normal in a few hours and showing no tendency to rise again, in others remaining about at 100° F. or 101°, or intermitting between this and normal. In this latter class of cases, I have found that quinine administered *per rectum* (commencing when the lowest temperature is reached, after administration of creosote, which it is probably useless to repeat more than once during the same defervescence) in doses of 20 to 30 grains at first, then 10 grains every three or four hours, will speedily check the fever, usually, as has been previously pointed out, without causing any signs of cinchonism, and obviously without upsetting the digestion. I am also inclined to believe that quinine enemata may aid in checking simple diarrhoea in those cases of fever where this symptom occurs chiefly as the result of a congested liver, but shows a tendency to continue after that organ has received appropriate treatment.

"In private practice suppositories are doubtless the most convenient form for exhibition, but small enemata containing the

quinine dissolved by the addition of just sufficient dilute sulphuric acid are quite effectual, sometimes more accessible, and possibly more efficacious in cases in which there is a tendency to diarrhoea."

Dr. Vladimir de Holstein, of Paris, France, reports very favourably on his treatment of chronic constipation by this agent when administered according to his plan. His first case was a young girl who had been treated for chlorosis with the usual iron and arsenic preparations and who was suffering from an obstinate constipation which would not respond to the usual forms of treatment. He began with a single drop of creosote in a glass of either wine and water, or beer, milk, or water alone, given twice a day after the two meals—not including breakfast. After the patient had become accustomed to taking this dose, the drops were gradually increased up to at least seven or eight until the proper action was obtained. This treatment was diligently continued for several months without any apparent ill effects and surprised Dr. Vladimir de Holstein by responding almost immediately in producing a daily movement without other assistance. Thus encouraged, he continued this treatment in other patients and now is able to report on a large number of cases in which all were relieved and no ill effects encountered. He urges that creosote does not, therefore, necessarily possess purgative properties, but evidently is capable of destroying some toxic intestinal micro-organisms which in these obstinate cases check the digestive processes throughout the alimentary tract.

Dr. Asmus, of Russia, reports (*Medizinskoie Obosrenie*, Vol. XLV, page 944) his fifty-eight cases of successful treatment of acute gonorrhoea by injecting an emulsion of 2 to 10 parts of creosote in 1,000 of water. He rarely encountered complications and his recoveries were more rapid than with other methods.

Cutol (a compound of aluminum borate and tannate), alluded to here last year, has not been heard of either in the old country or in this throughout the year, and probably has been discarded as of little value.

Dermatol (bismuth subgallate) continues to be largely used. Its efficiency to the surgeon as a substitute for iodoform is well recognised, for it is odourless, styptic, non-irritant, and non-toxic. Its application on gauze is very serviceable. Its use internally is now becoming more general. Being tasteless as well as odourless, it is not objectionable to patients. Several observers have obtained good results in the treatment of all forms of diarrhoea, whatever the cause may have been, in which it is safely given in

doses from 500 milligrammes to 2 grammes (7.7 to 30.9 grains) in water twice a day. Its tendency to constipation may be obviated by glycerin enemata. Dr. Perlmutter has had very good results in diarrhoea and gastric ulcers.

In the new edition (fifth) of the Russian Pharmacopoeia about to be issued, this agent is among the additions to be officially recognised.

Dextroform is a combination of dextrin and formaldehyde, prepared by Prof. A. Classen, of Aix-la-Chapelle, France. It is closely allied in composition and therapeutic effects to amyloform (starch and formaldehyde). This led Dr. P. Bongartz to make successful use of it as an antiseptic injection in the Mariahilf Hospital in Aix-la-Chapelle, in the treatment of gonorrhoea, cystitis, and in washing out an empyemic cavity. A solution of from 5 to 20 per cent., according to circumstances, was employed. It is next to amyloform in advantages over iodoform. (*Muench. Med. Woch.*, Vol. XLIV, page 585.)

Diuretin (sodio-theobromine salicylate) is still receiving prominent attention, but the only definite allusions of particular value during the year were two. Dr. Nestor Tirard, of London, England, delivered "A Lecture on the Diuretic Treatment of Renal Dropsy" at King's College Hospital, in which he speaks at some length on a case in which this agent was used. He concludes as follows:

"It is obviously unsafe to draw conclusions from one case, and it is no part of my purpose to-day, gentlemen, to attempt to reconcile these different statements. It must be a sufficient satisfaction to find that in the case before us great relief was obtained after we had used diuretin in place of other remedies, and that this relief of urgent symptoms coincided with the excretion of an increased quantity of fluid. In the early days of our employment of diuretin the asthmatic attacks first yielded, and afterwards we noticed that the amount of dropsy became considerably less. That the benefits obtained from this mode of treatment were not mere coincidences is shown by a slight return of asthma when, the patient having become accustomed to the use of the remedy, the amount of fluid excreted again became reduced; and you will have seen how the asthmatic seizures passed off at first with an increase in the amount of diuretin administered, and subsequently after the employment of digitalis in addition to the diuretin. I do not consider that the treatment is likely to produce any lasting beneficial effect. In all probability we shall have, sooner or later, to relieve

the pleura again by aspiration, and perhaps to relieve the tension in the extremities by acupuncture or by Southey's capillary tubes. But these measures we endeavour to postpone as late as possible, since frequently the strength fails rapidly after draining large quantities of fluid from the extremities, and there is always some risk of exciting inflammatory changes in the neighbourhood of the punctures." (*Brit. Med. Journ.*, Vol. I for 1897, page 705.)

The second prominent allusion was the report of Dr. Steiner, of Rosenberg, Prussia, on his good results in acute renal inflammation. He administered according to the following formula:

Diuretin	.	.	5 to 6 grammes (77.2 to 92.6 grains)
Water	.	.	180 " (about 7 ounces)
Simple syrup	.	.	20 " (about 5 drachms)

the dose being 15 grammes (1 tablespoonful) every other hour. Diaphoresis was produced by the sodium salicylate element in the split-up compound, and the dropsy was materially reduced. As a diaphoretic in acute nephritis then, this agent should be observed further by others.

In the new edition (fifth) of the *Russian Pharmacopoeia*, about to be issued, this agent is among the additions to be officially recognised.

Eka-Iodoform is a new substitute for iodoform, and is said to be a mixture of paraform and iodoform, thus improving the antiseptic properties, it is claimed. Its marked advantages are its complete sterility and freedom from irritating effects.

Dr. Thomalla, of Berlin, Germany, has used it with good results in about one hundred cases, and recommends it whenever iodoform would be applicable. (*Therap. Monatsh.*, Vol. XI, page 381.)

Electrozone—the name given to the antiseptic solution which is reported to be made up of sodium, magnesium, calcium, and other hypochlorites—has not been heard of in the current medical literature of the past year, although it has been well known that such solutions have been offered for some time past in this section of the country at least.

Ethyl Bromide (hydrobromic ether) is still clung to by a few surgeons, and undoubtedly continues to give good results in their hands, but it is none the less treacherous. One report deserves repeating here, as it appears to be a fair statement. It comes from Dr. W. H. Kelson, of Queen street, Cheapside, London, E. C., England:

“When cases requiring small but painful operations have to be summarily dealt with, as in the out-patient department of a large hospital, ether, chloroform, cocaine, and the various sprays are liable to prove unsuitable anaesthetics, either from the time they take, the vomiting they cause, the after-attention required, or their inefficiency. Nitrous oxide gas is, of course, not open to these objections, but over it bromide of ethyl C_2H_5Br . has the great advantage of portability and simplicity as regards the apparatus required for its administration.

“On the all-important question of safety, reviewing the work of Silk, Chisholm, Terrier, Cumston, Roaldes, and others, and especially of the more recent writers, the verdict would seem, on the whole, decidedly in its favour.

“The following cases are, of course, too few to influence this question either way, but are cited as examples of small operations for which it proved quite sufficient. The notes on each case were made immediately after the administration, and I was assisted by Dr. Leon and Mr. P. Williams, senior dressers at the London Hospital:

“Seven cases removing nails or parts of nails.

“Six cases breaking down adhesions.

“Four cases scraping sinuses.

“One case partial circumcision.

“Two cases scraping carbuncles.

“One case scraping small patch of lupus.

“One case removing tonsils.

“Specimens of the liquid varied in efficiency. One, which had been kept some time, had to be abandoned, as it seemed quite ineffectual, but had not changed colour. Another was of a brownish tint, presumably from free bromine, but it had not the suffocating odour of that liquid, and acted well.

“The method of administration was as follows: About a drachm and a half of the bromide was poured on the sponge of an Ormsby's inhaler, and the latter applied. There was very little tendency to excitement or struggling, and in about sixty seconds the cornea became insensitive and the breathing snoring. The inhaler was then removed and the operation proceeded with, the patient showing signs of returning consciousness in a variable period, but certainly averaging over sixty seconds.

“Vomiting occurred in two cases, but seemed to depend chiefly on the distended condition of the stomach. In these cases, the

inhaler had not been reapplied, but in two in which this was done there was no vomiting, but the patients seemed more exhausted afterwards.

"In five cases, rigidity came on immediately after the cornea became insensitive. This in the case of tonsillotomy, interfered with the introduction of the gag, and the inhaler had to be reapplied.

"In the case of one subject, afterwards found to be addicted to alcohol, the bromide having been administered for sixty seconds without any signs of anaesthesia supervening, seemed suddenly to take effect, and great rigidity, rapid breathing, and some lividity were produced, which, however, rapidly passed off.

"The respiration was, as a rule, regular, and the pulse somewhat quickened. The recumbent posture, in all cases, was the one adopted.

"The patient's age varied from seven to forty. The younger ones took it most readily. All the cases felt well enough to depart within ten minutes of the administration, though some hysterical symptoms appeared in two whilst recovering." (*Brit. Med. Journ.*, Vol. II for 1896, page 1711.)

Ethyl Chloride (muriatic ether), although undoubtedly much in use, has not been mentioned in the literature of the year in the way of any new applications.

Eucaine (methyl ester of benzoyl-methyl-tetra-methyl- γ -oxy-piperidin-carbonic acid) has grown rapidly in importance and efficiency, and a great deal has been reported upon it from all over the world. It would be quite impossible to spare the space here to even enumerate the reports upon it, but it will have to suffice to state that practically all reports extol its virtues. The advantages previously claimed for it and alluded to here last year appear to be pretty fully verified. The question of toxicity seems to be a little in doubt. Some claim it is quite equal to and others that it is less toxic than cocaine. A mixture of equal parts—32 milligrammes ($\frac{1}{2}$ grain)—of the hydrochlorates of cocaine and eucaine with 4 grammes (61.7 grains) of distilled water has been found to give better anaesthetic results, and may be tolerated in larger quantity than cocaine hydrochlorate alone.

Its use in minor surgical operations elicits the most favourable reports, even to the statement that it produces the most complete local anaesthesia of any agent offered up to this time.

Eucaine is claimed to be superior to cocaine as a local anaesthetic injected into the urinary apparatus. Dr. S. Alexander, of

New York City, however, has reported that in using it in one case of internal urethrotomy it produced such intense irritation of the mucous membrane that he felt obliged to abandon it.

In dental surgery, equally favourable reports are abundant. It is found that five drops of a 10 per cent. solution injected into the gum before extraction of a tooth was sufficient to render the operation painless. If the affected teeth are scattered, and more than one is to be removed, a little more of the solution may be necessary. It is reported that as many as twenty-one roots and ten and fourteen teeth respectively were extracted without pain at one sitting. Eucaine appears to be effective in periostitis where cocaine frequently fails.

The rhinologists, laryngologists, and aurists have made remarkably good use of this agent in their practice; the slight irritation noticed at times being the only drawback, and this is only temporary. Dr. H. L. Armstrong, of New York City, recommends the following throat spray as almost a specific in acute inflammation of the upper air passages:

Eucaine	0.650 grammes (10 grains)
Cocaine hydrochlorate	0.650 " (10 ")
Distilled water	175.000 " (6 ounces)

In ophthalmological practice a 2 per cent. solution has at times been found as active and even as irritating as a 10 per cent., but does not last quite so long nor is it as complete; however several applications of a 2 per cent. solution often acted as well as a 10 per cent., but complete anaesthesia is not produced quite as rapidly. Some observers report that they can see no advantage over cocaine, and in their belief eucaine will never supersede the former. However, such criticisms are comparatively few.

Dr. Thomas H. Shastid, of Galesburg, Ill., reported on February 6th last "A Case of Temporary Amblyopia from Eucaine" (*Journ. Amer. Med. Assoc.*, Vol. XXVIII, page 323) as follows:

"The new succedaneum for cocaine—eucaine—has, I believe, proved so useful and so nearly free from danger that its continued employment is not a matter for doubt. I have frequently used it in cases where its points of difference from cocaine have seemed to indicate its employment in preference to that drug, and I have often been struck, in such cases, by its excellences.

"Recently, however, there fell to me an experience of a kind to teach us that eucaine certainly has its dangers. The case was that of a man, a physician, aged thirty-two, who came to me with a

moderately large hypertrophy of the anterior extremity of the right inferior turbinated bone. Ordinarily, before applying galvano-cautery to the turbinated bones, I produce anaesthesia with cocaine. In this case, however, from the fact that the hypertrophy was seated so far forward, I did not think it necessary to produce the shrinking of tissue that follows the use of cocaine, and hence merely secured anaesthesia by means of eucaine. The strength of the solution I used was 5 per cent.

"Immediately after the cauterisation, the patient complained that his sight was growing dim, and a few minutes later, he said that it had entirely left him. There were no strongly marked constitutional effects, though the pulse was rather rapid and the patient seemed talkative and a little incoherent. The amblyopia was of exceedingly short duration, having almost entirely disappeared at the end of four hours. Neither while it continued nor afterward were any changes perceptible by the ophthalmoscope. The return of vision has been perfect and permanent.

"I have read of at least one case of amblyopia from cocaine, but as yet no other case from eucaine has come to my notice."

Admitting for the moment that eucaine was only equal to cocaine in its anaesthetic effects, a marked advantage which it possesses is particularly recognised by the ophthalmologist and that is a solution may be sterilised without decomposition and thus be kept almost indefinitely—in fact be kept actually indefinitely, for the sterilisation may be repeated by boiling from time to time.

The eucaine first introduced, and which most practitioners have been more or less familiar with, has now to be designated as "Eucaine A," for a "Eucaine B" has been introduced and Dr. P. Silex, of Berlin, Germany, has experimented with it. It is described as the hydrochlorate of benzoyl-vinyl-di-aceton-alkamin and closely allied to tropa-cocaine and cocaine. However, it is not irritating and is less toxic even than "Eucaine A." A 2 per cent. solution dropped in the eye produces a rapid local anaesthesia and only a slight redness of the conjunctiva. Only slight irritation is noticed by some patients, for it is neutral or only slightly alkaline in reaction.

This agent undoubtedly has a great future before it.

Eucasin, the new food compound, similar to nutrose, and obtained by passing ammonia gas over casein obtained from milk, has not been commented on during the past year.

Euchinin (euquinine) is a new compound of quinine introduced

by a well-known German manufacturing firm as possessing marked advantages over its relative. It is reported to be produced by bringing together, under certain conditions, quinine and ethyl chlor-carbonate resulting in the substitution of a molecule of ethyl carbonate for a hydrogen atom in quinine. It is presented in the form of small, colourless, needle-like, crystals which melt at 95°C. (203° F), sparingly soluble in water but readily in alcohol, ether, and chloroform. It is basic in its action and alkaline in reaction, forming definite crystalline salts with acids. The hydrochlorate is most soluble, the sulphate next, and the tannate practically insoluble. Its marked advantages over quinine are its practical freedom from taste (unless held long on the tongue, and then it is only slight), freedom from buzzing in the ears, headache, nausea, or disturbed appetite, thus meriting its name *eu* (good) quinine.

Clinically it has been used in the same class of cases as quinine would be indicated, but is found to be equivalent to half the quantity therapeutically. As much as 1 to 2 grammes (15.4 to 30.9 grains) have been given to healthy persons without showing any bad effects.

Prof. Carl von Noorden, of the Municipal Hospital at Frankfort-on-the-Main, Germany, has made close observations with this agent (*Centralbl. für innere Med.*, Vol. XVII, page 1225), particularly in fifteen cases of pertussis, fourteen cases of hectic fever in phthisis, five cases of fever of septic origin, in pneumonia with delayed resolution, enteric fever, and in several cases of neuralgia. To children and even to adults it is agreeably prescribed in sherry, milk, soup, or cocoa. The tannate is the preferable form on account of its insolubility. Its effects in neuralgia are not yet sufficiently established to report definitely.

Eudoxin (bismuth salt of nosophen) is still being employed both in the old and in this country. The reports upon it have not been numerous during the past year, but the general testimony of those who have reported is that it is one of the best of the bismuth salts as a gastro-intestinal disinfectant. If more practitioners in this country would publish their results with it in the current journals, the profession could draw more definite conclusions than at present.

Europhen (iso-butyl-ortho-cresol iodide)—the iodoform substitute, containing 27.6 per cent. of iodine—has been little commented upon during the past year. Dr. Seibel Nolda is said to recommend the following formula in the treatment of burns:

Europfen	.	.	.	.	.	.	.	1 part
Vaseline	.	.	.	.	.	.	.	10 parts
Lanolin	.	.	.	.	.	.	.	10 "

This is to be applied vigorously three or four times a day.

Dr. L. Nied, of St. Elizabeth's Hospital in Vienna, Austria, makes use of the following formula in the treatment of ulcers of the leg: (*Wien. klin. Rundschau*, Vol. XI, page 221.)

Europfen	.	.	.	.	.	.	.	3 parts
Vaseline	.	.	.	.	.	.	.	50 "
Lanolin	.	.	.	.	.	.	.	50 "

He acknowledges this to be rather weak and sees no objection to increasing the strength up to 10 per cent. of europfen. He also made good use of a dusting powder mixed as follows:

Europfen	.	.	.	.	.	.	.	1 part
Finely powd. boric acid	.	.	.	.	.	.	.	1 "

He rehearses twelve cases, ten of which were chronic ulcers of the leg in middle-aged and elderly women. All the ulcers healed promptly and no irritation of the surrounding tissues occurred. His results were better with the dusting powder than with the ointment.

Exalgin (methyl-acetanilid)—the analgesic—has been practically unheard of in the medical journals during the past year, although it is known to be used still to some extent. Bad effects are recorded by some practitioners, but those who are successful with it recommend divided doses repeated frequently, and finally increased to full doses.

Ferratin (acid albuminate of iron) has not been commented upon in the medical literature of the past year as frequently as the year previous; however, it is still in use and the enterprising firm which is handling it keeps the profession well posted as to its claimed superiority. It may be of some significance to many that the present Committee of Revision for the approaching fifth edition of the Russian Pharmacopoeia recommend this agent for introduction into that standard work. It is still claimed that it very closely approaches the natural iron compounds found in the system and in the food products usually eaten; therefore is explained its marked property of rapid absorption, and its freedom from constipating effects.

Ferripyrin (ferropyrin), the hemostatic compound consisting of

64 per cent. antipyrin, 24 per cent. chlorine, and 12 per cent. iron, has not been heard much of during the year just past. Dr. O. Schäffer's claims for it alluded to here last year have not been quite verified, as others state that equally good and more lasting results have been obtained by the use of other measures. The outlook for this compound is not very encouraging.

Ferrostyptin (the name given to a new antiseptic and hemostatic to replace solid chloride of iron) has not been found in the current medical literature of the year and thus has probably gone into early retirement.

Filmogen is the name given to a new form of collodion recently described by Dr. E. Schiff, of Vienna, Austria. It is simply pyroxylin (soluble gun cotton) dissolved in acetone and a small proportion of castor oil added to render the film to be formed flexible. In fact, it is quite the same as the United States Pharmacopoeia officinal flexible collodion, only acetone is used as a solvent in place of the mixture of ether and alcohol. The dermatologists naturally find it a most useful agent, as its solvent properties for most of the medicaments they use are great. Acetone at present is a cheaper solvent than ether and alcohol, and, therefore, if the product so produced will stand the test of time in the practitioner's hands equally, if not better than the present officinal collodion, it should be recognised in this country. The excellent solvent properties of acetone and its complete applicability in this connection have been known in this country for somewhat over a year, but the Pharmacopoeia does not yet recognise it.

It may be interesting in this connection to mention that the best solvent known, at least for pyroxylin, is methyl acetate.

Fluoral (sodium fluoride), recommended as a superior antiseptic and with less toxicity than corrosive sublimate, has not been reported on in the current literature of the year. Undoubtedly it still has some good claims for urging its antiseptic properties. It has long been known that hydrofluoric acid (HF) acts quite energetically in resisting fermentation, and it has been claimed that a solution of 1 to 1,000 or 1 to 500 is not much inferior to corrosive sublimate in such uses as a surgeon would make of it in the treatment of open wounds.

Potassium silico-fluoride (KSiF_6) in solution under the name of "salufer" (alluded to here last year) has been previously claimed as practically non-toxic and powerfully antiseptic. Its non-toxic properties, however, have been refuted.

Now Drs. Hallion, Lefranc, and Poupinel have called attention

to the marked superiority of mercury silico-fluoride (HgSiFl_6) over corrosive sublimate as an antiseptic. (*Comptes rendus hebdom. des Séances et Mémoires de la Société, de Biologie*, Vol. III of series 10, page 208.)

This reference is a year old, but is recorded here in connection with the above comments.

Formalin (40 per cent. solution of formaldehyde)—the now well-known antiseptic, disinfectant, deodouriser, and germicide—has received very prominent attention all over the world during the past year. This attention has been quite universally well-merited, for practically nothing but praise for its usefulness comes from all medical men who have employed it. The literature and comments during the year have been quite overwhelming as far as a brief comment is concerned, so that little can be mentioned here except in a general way. As an intestinal antiseptic it apparently has taken the lead over all others—by some it is claimed even to be the ideal antiseptic. Naturally it appeals most to the surgeon, but the general practitioner also finds an increasing number of applications. The most striking is in disinfecting and deodourising rooms, clothing, etc., by means of the specially constructed lamp for vapourising it. There are now many of these lamps on the market, and the number is rapidly increasing, for so many interested parties think they have a valuable idea to introduce in the lamp and thus modify those already offered. One of the simplest takes the form of an ordinary Bunsen burner with very slight changes exteriorly. Of course interiorly it, as well as all those in the market, has for its general principle about the same construction of a platinum hood or mantle, over which passes the vapour of methyl alcohol (wood alcohol) while the hood is heated to incandescence, producing the formaldehyde vapour. The other forms of lamp take on various shapes, some of them quite artistic, making something of an ornamental piece for household uses. Naturally, simplicity and substantial construction should be aimed at, particularly when long and frequent use is expected of it, as is the case in hospitals.

A 10 per cent. solution of formaldehyde has recently been successfully used for embalming. The injection acted as a perfect preservative for a trip across the Atlantic ocean. The caution is given that the embalmers should use rubber gloves.

Dr. Thomas S. Cullen, resident gynecologist of The Johns Hopkins Hospital, Baltimore, Md., has made a second report of his several years of experimental work on "A Rapid Method of Mak-

ing Permanent Specimens from Frozen Sections by the Use of Formalin." As this report has evidently elicited widespread interest, this writer is pleased to lend his aid by increasing its circle of interested readers by quoting this second report here in full:

"In April, 1895, I published two methods, under the above title, in the *Bulletin*.

"Since then, numerous requests have been made for reprints or for copies of the *Bulletin* of that number, and, as the supply is exhausted, it has been thought best to publish the article again, with one or two minor alterations. The methods have been continuously employed in the hospital, and especially in the gynecological department, and have proved uniformly satisfactory.

"A complete freezing outfit has been placed in close proximity to the operating room, so that as little delay as possible may occur in examining a specimen. For example, if a carcinoma of the uterus is suspected, the patient is brought to the operating room prepared for hysterectomy. The uterus is curetted, and the scrapings are examined while the usual preparations for abdominal section are being made. By the time all preparations are completed, the diagnosis is given; if negative, the patient is returned to the ward with the assurance that there is no cause for alarm; if positive, the organ is immediately removed. The woman is thus saved from taking an anaesthetic twice, and avoids the period of anxious suspense, of four or five days generally, required by the ordinary methods, to ascertain whether she has malignant trouble or not.

"Any one who has hardened tissues in formalin will be impressed with the rapidity of its action, with the firm consistence of the tissue, and with the absence of the contraction of the specimen so often seen when alcohol is used as the hardening medium. Microscopical examination of a specimen hardened in formalin, as we all know, shows almost perfect preservation of the cellular structure. Recently it occurred to me that formalin might be used in the preparation of frozen sections.

"One of the greatest difficulties experienced in rendering frozen sections permanent, lies in the fact that when passed through alcohol the section frequently not only contracts, but contracts irregularly, distorting the specimen; further, such specimens will often stain imperfectly. The use of formalin will obviate these difficulties, allowing one to make an excellent permanent specimen from the frozen section. My method is as follows: The tissue to be examined is frozen with carbonic acid or ether and then cut; the

sections are then placed in 5 per cent. watery solution of formalin for three to five minutes, or longer if desired; in 50 per cent. alcohol three minutes, and in absolute alcohol one minute. The tissue is now thoroughly hardened, and can be treated as an ordinary celloidin section, being stained and mounted in the usual way. On examining this mounted section, one might readily take it for a well-preserved alcoholic specimen. Supposing we stain with haematoxylin and eosin, the entire process is as follows:

“Method I.—a. Place the frozen section in 5 per cent. aq. sol. formalin for three to five minutes.

“b. Leave in 50 per cent. alcohol three minutes.¹

“c. In absolute alcohol, one minute.

“d. Wash out in water.

“e. Stain in haematoxylin for two minutes.

“f. Decolourise in acid alcohol.

“g. Rinse in water.

“h. Stain with eosin.

“i. Transfer to 95 per cent. alcohol.

“j. Pass through absolute alcohol, then through either creosote or oil of cloves, and mount in Canada balsam.

“The blood is lost in frozen sections. To overcome this, Professor Welch suggested that the specimen be first fixed in formalin and then frozen. I tried this, and found that we were able to preserve the blood, but that it did not stain very distinctly. For convenience, this second procedure will be called Method II. The essential factor is the same in each case. The latter process, however, requires at least two hours. A small piece of the tissue is thrown into 10 per cent. solution formalin for two or three hours. It is then put on the freezing microtome, and thin sections can be readily made. The sections are stained in the usual way. The detailed procedure of Method II is as follows:

“Method II.—a. A piece of tissue 1x5x2 cm. is placed in 10 per cent. aq. sol. formalin for two hours. Rinsed in water.

“b. Frozen sections are made.

¹ The slight modification of Method I, recently suggested by L. Pick, Centralblatt f. Gyn., Bd. XX, S. 1016, 1896, I cannot recommend. When first experimenting with formalin, among other procedures, I tried staining the sections after hardening in the formalin and before placing them in alcohol, as Pick now suggests. The results were fair, but the definition so obtained was not to be compared with that gained by first passing through 50 per cent. and absolute alcohol for the short period. I accordingly abandoned it, and did not think it worthy of publication.

- "c. Left in 50 per cent. alcohol three minutes.
- "d. In absolute alcohol, one minute.
- "e. The sections are now run through water and stained in haematoxylin for two minutes.
- "f. Decolourised in acid alcohol.
- "g. Rinsed in water.
- "h. Stained in eosin.
- "i. Transferred to 95 per cent. alcohol.
- "j. Passed through absolute alcohol, then either through creosote or oil of cloves, and mounted in Canada balsam.

"For ordinary use, Method I is all that is required. Given a piece of tumor from the operating room, it is possible to give as definite a report in fifteen minutes as one would be able to give after examining the alcoholic or Müller's fluid specimens at the expiration of two weeks. Method II is of especial value in the examination of uterine scrapings. Instead of putting them in the 95 per cent. alcohol in the operating room, they may be immediately dropped into 10 per cent. aq. sol. formalin. By the time the pathologist receives them, which is at least two hours afterwards, they are firm enough to be frozen without difficulty, and permanent sections can be immediately made. The second method is to be recommended for all delicate tissues. In employing these methods, one must remember—as, for example, in epithelioma—that some of the cell-nests will drop out, there not being anything to hold them *in situ*, as there is when celloidin is used. We have, however, hardened and stained epithelioma of the cervix by this method without the slightest difficulty." (*Johns Hopkins Hosp. Bulletin*, Vol. VIII, page 108.)

Most practitioners who make use of photography in their profession, which, by the way, has lent so much towards the interest and preservation of valuable records, have undoubtedly already had their attention called to the various photographic applications of this agent, although protected by a patent. Its most valuable property is that of hardening gelatin. A five per cent. solution of formalin applied to a film of gelatin and allowed to soak for about ten minutes and then washed and dried can be treated with boiling water for some length of time without being at all softened. As it seems to have no ill effects upon the progress of development nor upon toning, except that of somewhat prolonging those operations, it will be found to be a valuable substitute for the more troublesome and less efficient alum.

A new form of combination is now offered called formaldehyde-casein, which is simply a condensation product of formaldehyde and casein having similar properties to glutol. It is described as a coarse yellowish powder with a very slight taste and odour. Dr. Edgar Bohl, at Dorpat, Russia, has published his series of observations in twenty-five cases (*Muench Med. Wochsch.*, Vol. XLIII, page 889). This note is a little old but is interesting in this connection, and therefore is recorded here. The formalin was used in the form of powder in tampons and on gauze in the same class of cases as glutol has been employed. Special advantages over glutol were apparently not claimed.

Formopyrin, the name given to the new combination of formol and antipyrin which was predicted to act as an antipyretic, anodyne and antiseptic has not been heard of during the past year.

Gelante is the name given by Dr. P. J. Unna, of Hamburg, Germany, to a new skin dressing composed of gelatin and tragacanth, and prepared as follows: "Pieces of gum tragacanth are macerated for a month in twenty times their weight of water; then they are exposed for a day to the action of steam, with occasional stirring, and finally strained through muslin. The same weight of gelatin is softened in water and submitted to the action of steam under pressure; the two masses are next mixed, and the mixture exposed to the action of steam for two days; it is then again pressed through muslin and receives the addition of 5 per cent. of glycerin, a little rose water and 0.02 per cent. of thymol. The liquid thus prepared contains 2.5 per cent. each of gelatin and tragacanth. When spread upon the skin it dries rapidly and forms a pliable varnish. Considerable quantities of medicament may be added to this basis; as much as 50 per cent. of ichthyol, 40 per cent. of salicylic acid, resorcin, or of pyrogallol, 5 per cent. of phenol and 1 per cent. of mercuric chloride. Bodies which are incompatible in aqueous solutions, such as salicylic acid and zinc oxide, ichthyol and various salts are without action on each other when incorporated with this basis. The property of drying very rapidly distinguishes gelante from all other water soluble dressings, and from the large amount of water it contains it exercises a marked cooling and refreshing action when applied to the skin; it is capable of combining with fatty bodies, and can be applied cold to the surface. It promises to be a valuable addition to dermato-therapeutics, particularly in the treatment of eczema and psoriasis." (*Pharm. Journ.*, Fourth Series, Vol. IV, page 417.)

Glutol (formalin-gelatin) has had a large and increasing use which still continues, generally with successful results. It, however, has its special applications in which its antiseptic properties are considered the best of any agent offered to the surgeon. Its powdered condition offers the most attractive and effective form, and far the best results have been obtained when used thus. The most complete clinical study of this agent on suppuration in wounds yet made and which has been published since this time last year was accomplished by Dr. E. M. Foote, of New York City, in the Vanderbilt Clinic of the College of Physicians and Surgeons, New York City. He gives an interesting record of some thirty-six cases and draws the following impartial conclusions:

“Unsatisfactory as these brief descriptions are, it must be plain, even from their perusal, that the formalin has some antiseptic action. That was evident enough to one seeing the cases. But it fell far short of the point where one could say that it rendered a suppurating wound sterile. It seemed rather to control the infection for two days; and if the character of the wound was such that this respite was enough to insure its closure, the result was perfect. If not, then whatever gain was made in the first two or three days was maintained, and the wound went on with its customary granulating from that point. This, however, is a distinct advance over the usual treatment. At the end of the second or third day, instead of having a wound distended to its full size by the gauze-packing put in at the operation, one finds, on removing the dressing, a wound perhaps united altogether below the skin—at the worst half united; so that the time, until complete cicatrization has taken place, must be reduced by several days.

“A second point in favour of this treatment with formalin-gelatin is that it does away with the necessity for drainage. If the abscess-cavity is large, and there is purulent or serous fluid to escape, it finds its way out readily enough by the side of the mass of gelatin, while the grains of the latter, softened by the fluid, form in themselves an excellent capillary drainage. It was only in one or two cases, in which the abscess was small and superficial and the incision a very short one, that a dried scab prevented discharge.

This brought up the question whether some other powder would not answer as well as formalin. To test this I selected acetanilid, and used it in a half dozen cases, as I had used formalin. It does not readily mix with water, and so it was more unsatisfactory to

rub into a wound; but the patients told me that there was no pain after the dressing was put on, whereas there is more or less pain with formalin for four or six hours. The wounds looked so well on the second, and sometimes on the third, day, that I had almost concluded that formalin-gelatin acted merely mechanically; but they suppurated, with scarcely an exception, in the course of a few days.

"In no case treated did I succeed in getting primary union of the skin. It seems impossible that Schleich obtained an immediate union of the skin-edges, as, unless they are stitched together, they invariably retract a little. The ideal treatment of an abscess would be to sew it up again, but that is not possible until a more perfect antiseptic is obtained than formalin-gelatin proved in my hands. None the less, it seems to mark a distinct advance in the treatment of suppuration, giving the most perfect results in those cases where the cellulitis is moderate and the pus abundant." (*Med. News*, Vol. LXIX, page 546.)

Guaiacetin (the new compound offered as a substitute for creosote and guaiacol in the treatment of pulmonary tuberculosis) has not been commented upon in the current medical literature of the year past.

Guaiacol (the chief constituent of creosote) and particularly its carbonate have been very largely and successfully used throughout the past year. Much has been written upon these, and especially the latter. Previous observations have in general been fully verified, and the many additional applications have simply been natural deductions from previously recorded results. It would be impossible to even record here all the comments of the year, but a sufficient number will be noted to emphasise its practical usefulness.

As might be expected, it has had its largest use in the treatment of tuberculosis, by external and internal application, by injection, and in conjunction with iodine—all of which were alluded to here last year as being successfully employed the previous year.

At a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland, held on November 20 last, Dr. Drury read a paper on "*Guaiacol in Pyrexia*" . . . "in which he drew attention to the uses and modes of use of guaiacol, but selected the method of epidermic application recommended by Rondet in 1895, as a means of reducing temperature, superior to either internal administration or by hypodermic injection. By this method 1 to 10 minims were rubbed into the skin, previously

washed, and the part covered with oiled silk. About fifty cases have been so treated. The conclusions arrived at were: (1) As a rule, no ill effects follow its use; in one case of enteric fever in a female, after the use of *mx* on five successive evenings, collapse occurred several hours after the fifth application; the collapse was recovered from; (2) it very rarely fails to cause a fall of temperature, the fall being greater when the temperature is high than when it is only moderate in degree; (3) the fall reaches its maximum generally about one hour after administration, and is maintained for several hours; (4) after its use the skin becomes moist, and the patient generally sleeps; (5) it does not seem to have any effect on the course of the disease which is the cause of the fever; (6) it seems to act on pyrexia, no matter what the disease may be which causes it; (7) it usually increases secretion of urine, diminishes the night sweats of phthisis, and often relieves the cough; (8) cardiac failure appears to be the only contraindication to its use. A series of cases were then given in illustration. Most of the cases were used merely as test cases, the drug not being used as an ordinary line of treatment. Its routine use was not recommended, but for exceptional cases, where temperature is itself a danger, it is considered in most cases safe, as well as a simple and pretty certain method of reducing temperature." (*Brit. Med. Journ.*, Vol. II for 1896, page 1715.)

The discussion which followed brought out prominently that this agent was not only very useful, but also very dangerous.

Dr. Pierre Wagon reports (*Gaz. hebdom. de Med. et de Chirurg.*, Vol. XLIV, page 484) excellent results in the treatment of erysipelas after applying once or twice daily from 1 to 2 cc. (about 16 to 32 minims) of this agent, for at times as striking a fall in temperature as four degrees in two hours resulted. The general condition of the patient improved also. Too sudden a reaction is fraught with danger, but if care be taken about the dose the danger is slight.

Dr. J. F. R. Appleby, of Washington, D. C., records (*Boston Med. and Surg. Journ.*, Vol. CXXXVI, page 258) his results with "Guaiacol in Puerperal Eclampsia," giving an account of two cases and concluding as follows: "Both of the above cases had albuminuria and were much swollen, which symptoms demanded treatment for a few days. Both made good recoveries, and are now enjoying ordinary health.

"For guaiacol there may be claimed certainty of action, speedy relief of urgent symptoms and ease of application, which renders

it perhaps more desirable and less objectionable than any one of the remedies heretofore used in eclampsia.

"In neither case did I find it necessary to make a second application, but would certainly have done so had it been necessary."

Dr. E. K. Morris, of Sturgeon Bay, Wis., writes to the editor of the *Medical News* (Vol. LXX, page 57) on "Guaiacol in Rhus-Poisoning," as follows:

"August 16 last, I was called to see a patient, male, aged forty-five years, suffering from an aggravated form of rhus-poisoning, the face being swollen to such an extent as to wholly obliterate the features, and the eyes being entirely closed. I made an application of zinc-oxid ointment, and ordered applications of carbonate of sodium $\frac{3}{4}$ ii in aqua $\frac{3}{4}$ iii on absorbent cotton; result, negative. Third day after onset I made an application of pure guaiacol, freely painting it over the inflamed area with a camel's hair brush, and then covering the parts.

"Next day there was marked amelioration of the trouble, and on the fourth day after inaugurating the guaiacol treatment, the poisoning and its resulting inflammation had entirely disappeared.

"Again, on October 7, I was called to treat a boy of eleven years with the same trouble, one side of the face and neck being affected to about the same extent as the previous case. I used the same treatment as before, viz., guaiacol, and on the second day thereafter he was out and at school, the trouble having entirely abated.

"Some two years ago I was led to try this drug in the treatment of erysipelas, having received a monograph on the subject from Dr. C. J. Whalen, of Chicago, and with good results, which was my reason for experimenting with it in the above two cases of rhus-poisoning.

"Of course, these being the only cases in which I have had an opportunity of using this treatment, it would be premature to claim the guaiacol a specific; yet it certainly seems to have been of good service."

Dr. Colleville, of Reims, France, reports (*Centralbl. für innere Med.*, Vol. XVII, page 1306) good results as a local anaesthetic after hypodermic injections of about 30 drops of a mixture of chloroform 5 parts, guaiacol 3 parts, as a substitute for the usual morphine injection in such affections as neuralgia, neuritis, rheumatism, and to relieve the pain resulting from fractures.

Dr. J. E. Newcomb, of New York City, read a paper before the American Laryngological Association at the annual meeting in Washington, D. C., on May 4 last, on "Guaiacol as a Local Anaes-

thetic in Minor Operations on the Nose and Throat," in which he concludes:

"From no point of view can it be maintained that guaiacol is superior to cocaine. I have made no such statement, but have sought to fairly record clinical results. Guaiacol requires for absorption a much longer time than does cocaine. In oily solution, at least, it is more difficult to prepare and less agreeable to handle. To some few people its odour is disagreeable.

"In the cases thus far reported, numbering, with my own, ninety-eight in all, not the slightest constitutional effect (much less a dangerous one) has been noted. The anaesthetic effect is less certain than that of cocaine, but where, for any reason, the latter is inadmissible, guaiacol is in the majority of cases a reliable substitute." (*N. Y. Med. Journ.*, Vol. LXVI, page 276.)

Various compounds of guaiacol are now prominently in use. One of the principal ones is guaiacol valerianate, or so-called "geosote." Dr. Frank Woodbury, of Philadelphia, Pa., read a paper before the Section of Materia Medica, Pharmacy, and Therapeutics of the American Medical Association at its annual meeting in Philadelphia, on June 1 last (*Journ. Amer. Med. Association*, Vol. XXIX, page 465) in which he closes as follows:

"I have found the guaiacol valerianate of decided value in the treatment of the so-called catarrhal state, which is sometimes considered as the pre-tubercular stage of phthisis pulmonalis. It seems especially suited, when properly diluted with some bland oil, for intra-tracheal injection in cases of advanced phthisis, with or without ulceration in the larynx, or cavity in the lung. Inhalations of creosote in combination with oil of peppermint are claimed by Dr. Carasso to cause a disappearance of the tubercle bacilli from the sputum, and he reports good results clinically after nearly ten years' experience with it. Certainly, the form of aerial medication is worthy of extended trial, and guaiacol valerianate would be preferable to creosote for this purpose. I am of the opinion that we have in guaiacol the best remedy known at present to counteract the pernicious activity of the tubercle bacillus, and I may repeat the words of Dr. Jacobi: 'No one treatment of all forms of tuberculosis ever satisfied me to the same degree as has that of guaiacol.' When introduced into the stomach, the guaiacol valerianate is decomposed, and the effects of pure guaiacol, with the sedative action of valerianic acid, are simultaneously obtained, which may be expected to have a favourable effect on the nervous manifestations of the disease, reducing cough and

restlessness. In pneumonia, Malderasco used applications of guaiacol to the thorax posteriorly, over the affected area of the lung, with reduction of temperature and a diminished mortality."

Foreign observers have experimented with this compound, and find it of value. Among those who have made definite reports may be mentioned Dr. Rieck, of Bassam, Upper Guinea, Africa (*Deut. Medizinal-Zeitung* for 1896, page 1075), and Dr. Wendt.

A new synthetic compound of this agent has been produced in England by combining guaiacol with piperidine under certain conditions, which goes by the name of guaiacolate of piperidine, possessing the important property of being soluble in about $3\frac{1}{2}$ per cent. of water. Drs. Arnold Chaplin and F. W. Tunnicliffe, of London, England, have reported their experience in the treatment of phthisis by this new compound, with the following conclusions:

"In stating the effects of any new drug upon a given disease, the physician must always guard himself against 'over enthusiasm,' so often it happens that a new medicine has been reputed to be successful in some affection, and upon fuller trial its effects are found to be trifling, or even *nil*. Of piperidine guaiacolate it may be generally stated:

"1. That experience has shown that it is a perfectly safe drug in doses from 5 to 30 gr. (325 milligrammes to 2 grammes) three times a day.

"2. That it causes no unpleasant effects.

"3. That it is exceedingly well borne by the stomach, and in this respect it is equal to any other derivative of creosote.

"4. That patients while under its influence improved in appetite and general strength." (*Brit. Med. Journ.*, Vol. I for 1897, page 136.)

The phosphate is another compound which has been in use lately. Dr. Gilbert recently reported on it before the Paris Biological Society, at its meeting on February 27th, last, as follows:

"Guaiacol phosphate is a crystalline body, without colour, smell, or taste. It is soluble in strong alcohol, but insoluble in water, glycerin, and oils; it melts at 97° C. The proportion of guaiacol which it contains is 89.4 per cent.

"When introduced into the digestive tract of man or animals, guaiacol phosphate passes through the stomach without undergoing any modification, and is disintegrated in the intestine. It is then absorbed, and eliminated principally in the urine. It is less toxic than guaiacol.

"I have administered guaiacol phosphate, in the form of cachets, in certain cases of pulmonary phthisis, the daily dose being from 40 to 60 centigrammes. Its action has appeared to me to be equal to that of guaiacol and creosote.

"Compared with other compounds of guaiacol, the phosphate possesses the advantage of having a larger proportion of this substance than the others, except the carbonate and the phosphite, in which the percentage of guaiacol is still higher.

"In addition, the phosphate and the phosphite are superior to the carbonate in that their disintegration results in setting free a phosphoric radicle, instead of indifferent carbonic acid.

"In comparison with pure guaiacol, the phosphate presents various disadvantages, on account of its high melting point and its insolubility in oil, which prevents its being applied to the skin or in the form of interstitial injections, suppositories, or enemata. On the other hand, the absence of taste and smell, its insolubility in the stomach, and its low degree of toxicity are positive advantages, which insure for it a place in therapeutics." (*Med. Week*, Vol. V, page 104.)

The phosphite also has been prepared as follows: 124 grammes (about 4 ounces) of crystallised guaiacol is treated with 50 grammes (about 1½ ounces) of caustic soda dissolved in 90 per cent. alcohol. To the clear solution thus obtained, phosphorous trichloride is run in through a tapped funnel until the solution is no longer alkaline to phenolphthalein. The salts then precipitated are filtered out, the alcohol distilled off, and the residue taken up with absolute alcohol. The phosphite of guaiacol is found to be in the alcohol solution. This is evaporated on a water bath and the salt crystallised out. If necessary, this may be purified by recrystallisation and finally dried over sulphuric acid. The resulting crystals are the neutral phosphite in the form of a white crystalline powder.

Guaiacol carbonate has been given the short name of duotal by the manufacturers.

Guaiacum is still an article much used in pharmacy, but little has been mentioned concerning it in relation to its direct or individual action in the treatment of any particular affection. A discussion on the subject of chronic gout before the Royal Medical and Chirurgical Society of Great Britain was liberally quoted from here last year, with the hope that it might assist some observer who might be studying the vexed question of gout. With the same end in view this year, but on an entirely different line, it is

proposed to introduce here the whole of a paper read before the Section on Practice of Medicine of the American Medical Association, in Philadelphia, Pa., on June 1st, last, on "Treatment of Gout," by Dr. H. C. Wood, of Philadelphia, for the reason that the writer's present humble opinion, based on conclusions gradually formed after some study and thought, run along in that same line. Dr. Wood says:

"I am expected to epitomise in fifteen minutes the wisdom of the ages with regard to the most frequent of all conditions, probably, of the better class of the human race. I want in the first place, however, to clearly develop before you what I myself believe, that all our scientific knowledge of gout at the present amounts to little more than a mass of trundling expectation, upon which, hereafter, shall be built some true knowledge. And I think that in the successful treatment of gout, the understanding of this is the basis. There are three great manifestations of the same thing which is universally allied to itself. We have rheumatoid arthritis as one type; we have podagra, or true gout, as the second type; and we have acute articular rheumatism as a third type.

"Let me give you just one illustration from family history, that of my own case, which represents the family history of all the better families in this city which have endured here for generations: A great grandfather leaving his descendants the results of high drinking and living in England, a few dollars and much gout, the one disappearing, the other continuing; a second generation whose history I do not know much of; a third generation, nearly the whole of which dying of gouty degeneration of the cerebral arteries or heart; a fourth generation, some of them developing attack after attack of acute rheumatism, half a dozen, eight, nine, or ten in the life history of a single individual; one of them having true podagra; all of them plagued with the various manifestations that we know as nervous gout. There is a relation between these things, not the same thing, but they have the same basis, and this basis absolutely eludes our grasp scientifically.

"Now, when we come to treat gout, if we purge ourselves of the false idea which we think we possess, we can recognise the importance of this great principle, not to attempt to treat gout at all, but attempt to treat the individual who comes before us. Let me take simply the question of diet. You know that we inherited from Sydenham the belief that gout was made worse by red meats

and that they should not be used. I have seen gouty patients in whom a single piece of ordinary red roast beef would precipitate a furious attack. I have also seen many gouty patients who would not get well until they were put upon red meat. What is the diet for gout? There is no diet for gout. It is diet for the individual. I have seen gouty patients who, if they took starch or sugars, went right down; and I have seen gouty patients who had to take starch and sugars to be built up. Therefore the first principle in the diet of gout is to adapt it to the individual before us. You judge of the case by the effects of experiment. In a large majority of cases sugar and starches have to be cut off. In spare gouty patients starches often do good; farinaceous diet may be essential. You have to order your diet according to the individual. A milk diet is one which probably suits the large majority of patients. But that which suits the individual, the stomach, the digestion, will suit the gout or kill the gout.

“When we come to the treatment of gout by exercise we find the one thing which does more good than anything else in almost every case, provided we direct the right amount of exercise. If we try to put into an ounce bottle, three gallons of exercise, we crack the bottle. Massage is a form of exercise, and it may be all that your patient can endure; fifteen feet of walking may bring on weariness or it may require some Alpine height. The same story, study your case. Begin with the slightest amount of exercise, but do not let up. Be inexorable. Keep it within the point of causing exhaustion, and each day do an ounce more if necessary. That is the whole secret of exercise in gouty patients. Begin with a small measure and gradually increase the amount, and you will find it does more good than any drug. The bicycle is the great calisthenic of the world.

“With regard to drugs, there are a great many people who tell you that salicylates do no good. Men do not get good out of salicylates because they do not use them properly. I do not believe that salicylates cure gout or rheumatism, any more than that bromids cure epilepsy. They simply aid in keeping down the diathesis. If there be any cure, it is exercise. If you use your salicylates on a case properly, and get no response, you have something more than ordinary gout or rheumatism to deal with. There are certain cases which approach typical gout such as we rarely see in America, in which colchicum does good, much more good than salicylates. I have seen two cases of typical English gout corresponding to Sydenham’s description, and only two. We

do not have it in this country. Those cases colchicum suits better than salicylates do. Sometimes, when the cases are on the border line, you will get the best results by a combination of colchicum with salicylates. If you have a strong, robust man, he will stand it. Give him knockdown doses in addition to purging him and you will bring him through. But that treatment may be worse than the disease, and has to be used with caution.

"In using salicylates the profession almost universally choose the worst salt they can find, and that is the sodium salicylate. It is, perhaps, not so bad as salicylic acid, but it is much more apt to turn the stomach, and is less effective and more depressing than the other salts of salicylic acid. The two salts which are truly useful are the ammonium salt and the strontium salt. The ammonium salt acts immediately and severely; the strontium salt acts slowly. If you have an acute case, use salicylate of strontium, or use the two combined. The strontium salt has this advantage, that it does not derange digestion anything like the other preparations, and many a time have I seen the best effects on the intestinal condition from the use of the strontium salt.

"In a large majority of cases you will find that salicylates produce depression, and perhaps a little nausea, general wretchedness, and the patient refuses them. Nine times out of ten you can overcome those effects by combining your salicylate with digitalis and strychnin in the same prescription.

"As to baths, you can not cure a diathesis by baths. It cannot be done. But baths are useful, hot baths, steam baths, Turkish baths. Any man who values his own life, who has had a gouty grandfather, ought to take a Turkish bath once a week. You can not wash out ancestral traces in any other way. The kidney disease and the atheroma will be far less rife if we use the hot bath more than we do. The baths eliminate, give a temporary result, and are very useful when employed with the understanding that they do not cure the disease but relieve the symptoms.

"A word about the Tallman-Sheffield apparatus or dry heat, which I have had a good deal of experience with this year. For about three months I had a large clientele using it all day long. In the first place, it is absurd to suppose that this is going to cure the gouty diathesis any more than that any other application will. In the second place, it is my experience that it has very little value in the rheumatoid arthritis. In the third place, it is of very little value in chronic inflammations, even of purely gouty character, in joints. But I had my office crowded with people seeking relief,

and it is empty to-day and that is the best criterion of the result. If the results claimed for the treatment were obtainable, I could soon fill this hall with patients, for they all want relief, but every missionary I sent out converted the people to the wrong faith. On the other hand, when you have deposits in the tendons and outside the joints; when you have traumatic synovitis, whether in baseball men or other persons, the results of this apparatus seem almost marvelous. I have seen a pitcher's hand drawn up and disabled for three or four years, the condition pronounced by a distinguished physician as gout, treated by the dry heat method, and after three or four treatments the hand had become pliable and the use of it came back. So, in acute strains and tendinous inflammations, this dry heat is of great value. In subacute rheumatism it is of value through its sweating and local influence. It has to be used at high temperatures. I carried it up to 330 degrees F. You can scorch the lint wrapped around the limb without scorching the limb. It has no value at all, according to my experience, in old cases of rheumatoid arthritis, and very little use in rheumatism of the joints." (*Journ. Amer. Med. Assoc.*, Vol. XXIX, page 223).

Guaiacuin is the compounded trade name given to a new substitute for guaiacol. It is prepared by the interaction of guaiacol-sulphonate and quinine in molecular proportions, giving chemically quinine guaiacol-bi-sulphonate. It is described as being in very fine yellowish, odourless, acid, and bitter crystals, freely soluble in water, alcohol, and dilute acids. Its advantages over guaiacol are its freedom from odour and caustic properties. It is recommended as an intestinal antiseptic, as an efficient antiperiodic in malaria, and as a stimulant to the gastro-intestinal glands. Cases of anaemia are reported to be especially benefited by its use. The dose varies from 130 to 650 milligrammes (2 to 10 grains), given in capsules three times a day. It is reported to be quite hygroscopic, and therefore should be kept from the air and moisture. A 10 per cent. solution may be injected hypodermically with only slight pain.

Further confirmatory clinical reports are awaited.

"*Harrowing*," so called, in the treatment of sciatica, has been intimated and even tried in a modified way before, but the cases are so rare that it may be of service, at least to some, to read the following:

"Dr. A. Martyn, in his thesis for graduation, relates two cases of sciatica which had resisted every variety of medicinal treat-

ment, but were cured by Dr. Gérard-Marchant by means of 'harrowing,' an operation which consists in tearing apart the fibres of the nerve with any blunt instrument.

"This treatment was employed for the first time by Dr. Dalagénère (Le Mans) in a case of femoro-gluteal sciatica. (*The Medical Week*, 1896, page 306), in which he had at first intended to excise, according to Quenu's method, the small varicose veins presumably existing around the nerve. After exposing the nerve, no true varicose veins were found, however; the trunk of the sciatic was simply crossed in all directions by small serpiginous vessels, which it would have been impossible to cut out between two ligatures. Dr. Delagénère then, with a pair of haemostatic forceps, performed, all along the denuded portion of the nerve, a kind of teasing of the nerve-fibres, his object being to destroy any small veins which might exist in the interior of the nerve, and thus to prevent stasis in them. His patient was cured.

"Dr. Gérard-Marchant concluded from this favourable result that harrowing ought to have a curative effect even in cases of sciatica having nothing to do with varicose veins. He soon had occasion to test his theory in two cases of sciatica which fully confirmed this view.

"The first case was that of a woman of thirty-seven, suffering from sciatica on the right side, which prevented her from standing up, deprived her of sleep, and had already brought on the characteristic scoliosis. There were no signs of hysteria, and no indication that the neuralgia might possibly be due to varicose veins. It had resisted all applications of the methyl chloride spray, sulphurous douches, and vapour baths.

"The second case was that of a man forty-five years of age, with inveterate left sciatica, which had also resisted all previous treatment. In this case, also, there were no varicose veins.

"The technique of the operation in both cases was as follows:

"The patient having been chloroformed, a cutaneous incision 15 centimetres in length was made along the line of the sciatic nerve, the lower bundles of the gluteus maximus muscle were divided, and the trunk of the nerve exposed. It was found to be of normal colour and size, with no trace of varicose veins. Harrowing or teasing the nerve bundles was then performed on 2 centimetres of the nerve, with the blunt end of a grooved director. In the course of this operation, it was still further ascertained that the venules passing along the nerve fibres were not at all dilated. After the operation, the nerve had become flat and dou-

ble its normal width. The bleeding was stopped, and a drainage tube introduced into the wound; the muscle was then sutured, as well as the skin, and an iodoform and absorbent cotton dressing was placed over the whole.

"The dressing was held in place by means of a very simple broad flannel bandage, wrapped round the trunk, over a thick layer of absorbent cotton. To this bandage was then fixed, by means of two safety-pins, a piece of calico, which was sufficiently long to reach down to the middle of the thigh and wide enough to go twice round the limb. The thigh was thus covered, and the calico bandage fixed with safety-pins at its lower end.

"The harrowed nerves remained painful for a few days, and in both patients the limb was numb; then gradually sensation returned, and the neuralgia was completely cured.

"To ascertain the mechanism of the cure in these cases, Dr. Marty experimented on a guinea-pig, a rabbit, and a dog. He found that harrowing of the sciatic nerve results in temporary loss of sensation, but motility is preserved intact. He is, furthermore, of opinion that this operation may be tried with advantage in long-standing neuralgia of other nerve trunks." (*Med. Week*, Vol. V, page 359.)

Holocaine is the name given to a new synthetic local anaesthetic offered as a substitute for cocaine. It is closely allied to phenacetin, and is formed by the combination of molecular equivalents of phenacetin and π -phenetidin with the separation of water, resulting chemically in fine crystals of π -di-eth-oxy-ethenyl-amidin. It is basic in its action and insoluble in water. The hydrochloride—fine colourless, needle-like crystals—is the salt chiefly employed, for it will readily dissolve in boiling water, but when a hot saturated solution becomes cold, it only contains about $2\frac{1}{2}$ per cent. of the hydrochloride. This solution has a slightly bitter taste, is perfectly neutral in reaction, and keeps many months without change. Even boiling does not decompose it, but if boiled in a glass vessel, the solution becomes cloudy, due to its attacking the glass. A porcelain vessel should always be used when sterilising this solution. It is claimed, however, that as the solution itself is antiseptic, it need not be boiled.

Dr. G. Gutman, of Berlin, Germany (*Deut. Med. Wochensch.*, Vol. XXIII, page 165), has experimented quite largely with this agent, not only on rabbits, but in his eye clinic. He has found that from 3 to 5 drops of a 1 per cent. solution of the hydrochloride will first produce a temporary burning sensation, which is fol-

lowed in one minute by complete insensibility of the cornea. This lasts from five to fifteen minutes. The conjunctiva is likewise affected similarly, but not quite as deeply as the cornea. His clinical cases were confined to thirty men: Thirteen with foreign bodies in their eyes, two of keratitis, seven eye operations including the use of the galvanó-cautery, and eight on healthy eyes. In two cases of leucoma, tattooing was performed. The advantages over cocaine are the rapidity in producing anaesthesia and the long duration of the effects. It has no effect on the pupil nor on the intra-ocular pressure. Its advantages are that it cannot be used in injections, either subcutaneously or under the conjunctiva, on account of its marked toxic properties. Until much more is learned concerning it, it is recommended not to use it hypodermically.

Drs. R. Heinz and C. Schlösser, of Munich, Bavaria, have also carried on a series of experiments with this agent, arriving at substantially the same conclusions (*Klin. Monatbl. für Augenheilkunde*, Vol. XXXV, page 114.)

Ichthalbin (ichthyol-albumin) is a new substitute for ichthyol introduced by Dr. H. Vieth to avoid the disagreeable properties of the latter. It is prepared by mixing solutions of ichthyol and white of egg which produces a precipitate. This is washed with alcohol and freely with water and finally dried, producing a fine grayish-brown, odourless and practically tasteless powder which is insoluble in ordinary acids, but readily soluble in alkaline solutions and is non-toxic.

Dr. Arnold Sack, of Heidelberg, Germany, after a series of experiments was the first to recommend its use in all cases where ichthyol is indicated. He reports on thirty successful cases. Its chemical properties make it a valuable intestinal antiseptic as it passes the gastric digestion undissolved and reaches the intestinal secretions where solution takes place. The adult dose is placed at from 1 to 2 grammes (15.4 to 30.9 grains) daily; for children not to exceed 1 gramme (15.4 grains)—given best just before meals. It is calculated that four parts of ichthalbin are equivalent to three parts of ichthyol.

It has apparently given satisfactory results in anaemia, tuberculosis, rachitis, scrofula, syphilis and intestinal catarrh.

Ichthyol (ammonium ichthyol-sulphonate) has been largely used and written upon during the past year. Comments here therefore will have to be chiefly confined rather to generalities than to an enumeration of all the allusions to its general beneficial

results. It possesses some inherent properties which have not as yet been counteracted fully. The disagreeable eructations (usually present) after administration and its repulsive taste and smell are still drawbacks to its use. Various expedients have been adopted to avoid the last two, such as prescribing in capsules or coated pills. It has lately been suggested to make it up into pills with liquorice extract. It has recently been prescribed with syrup of ferrous iodide but the pharmacist found great difficulty in mixing the two ingredients. Mr. John Martin, of Crieff, Scotland, has apparently solved the difficulty. The following is the formula and Mr. Martin's comments:

Ammonium ichthyol	7.5 grammes (about 120 grains)
Syrup ferous iodide up to 60	" (" 2 ounces)

Apparently every plan that could be thought of was tried in order to mix these two ingredients, and the only way it could be done was by adding 1 gramme (15.4 grains) of powdered tragacanth to the syrup before adding the ichthyol.

Practically all reports agree in the superior properties of ichthyol as an antiseptic, analgesic, antiphlogistic, and bactericide. Its use has been continued in the treatment of pulmonary tuberculosis with favourable results. It has recently been quite successfully used painted over joints enlarged by rheumatism and gout. In scarlet fever, measles, and diphtheria it has its advocates.

Until the past year little attention apparently had been given to its use in the treatment of nasal and laryngeal affections but recently its efficiency is being established. Dr. M. Ertler, of Vienna, Austria, had previously reported (*Wien. Med. Presse*, Vol. XXXVII, page 1009) gratifying results in ozena, by injecting a 2 to 5 per cent. aqueous solution, preferably by means of an ordinary syringe. He concluded that this agent was the best in dry pharyngitis, either accompanied with ozena or not.

Chronic purulent otitis media has responded to this agent to good effect.

Dr. I. S. Kolbassenko, of Russia, recommends the following ointment in variolar eruptions:

Ichthyol	1 gramme (15.4 grains)
Oil of sweet almonds	6 grammes (92.6 ")
Lanolin	2 " (30.9 ")

This is applied three times daily to the eruption just as soon as it makes its appearance, and is continued until all the crusts are

detached. The entire body is coated with this ointment in cases of confluent smallpox. This procedure is not considered an inconvenience even in very young children. The general condition of the patients is favourably affected by these applications. The itching is much reduced, the suppuration decreased, and the period of desiccation and desquamation is shortened one-half—the temperature generally remaining below 39.5° C. (103°F.).

Dr. Walter Gripper, of Wallington, England, reports his gratifying results in applying a solution of this agent to the inflamed tissue about a vaccination point where the most rigid precautions to avoid inflammatory action had been taken. He reports: "I have always found painting around and even over the vesicles with a 30 to 50 per cent. solution of ichthyol in water reduces pain and irritation almost at once. It will be found a most useful application, even in ordinary cases, with or without a pad of antiseptic wool or gauze. All hot and moist applications are to be strictly avoided." (*Brit. Med. Journ.*, Vol. I for 1897, page 443.)

The dermatologists are making good use of this agent. It has been used effectively in erysipelas, herpes zoster, acute eczema, psoriasis, and the like. In psoriasis Dr. Richter recommends the following ointment:

Ichthyol	3 grammes (46.3 grains)
Salicylic acid	3 " (46.3 ")
Pyrogallic acid	3 " (46.3 ")
Olive oil	10 " (154.3 ")
Lanolin	10 " (154.3 ")

At the meeting of the American Medical Association in Atlanta, Ga., in May, 1896, Dr. Henry A. Pulsford, of South Orange, N. J., related his "Experience in the Treatment of Ringworm of the Scalp in the New York Skin and Cancer Hospital," before the Section of Dermatology and Syphilography. He advocated preferably in the seventy-five cases treated by him the preparations of mercury, but in the discussion which followed, Dr. Wolff, of Atlanta, made the following remarks:

"As far as treatment was concerned he had tried almost everything. The plan which he had learned in Unna's clinic in Hamburg he had perhaps found to be the best, and this was that the head was to be shorn, then washed with soap and then the following ointment to be applied with considerable friction twice a day, and used for several weeks:

R Chrysarobin	5 parts
Acid salicylic	2 parts
Ichthyol	5 parts
Vaselin	88 parts

Then if much irritation resulted, a milder salve such as

R Zinc oxidi.	6 parts
Sulph. precip	4 parts
Lard	20 parts

"This was used until the irritation was reduced. Caps were to be worn by the patients all the time, except when being treated. Dr. Wolff remarked that he had never seen such rapid cures as in Unna's clinic, where this plan was adopted."

Dr. M. B. Hutchins, of the same city, followed in the discussion. "He had tried, where there were only single patches of ringworm of the scalp, a mixture of corrosive sublimate, 1 to 4 grains, with kerosene oil, one ounce, until a thick scaly condition was produced, when the application was changed to an ointment which contained the following:

R Ichthyol	20 grs.	1.20
Acid salicylic	20 grs.	1.20
Zinci oxid	3 i	32.00

until the scales were removed. He had seen cases get well in three months under this treatment." (*Journ. Amer. Med. Assoc.*, Vol. XXVIII, page 72.)

The surgeon has not lost sight of its applicability to his line of work. Orchitis has been successfully treated. Dr. Jules Chéron, who reported last year its successful use in fibrous tumors of the uterus, now records invariably good results in all his cases of fissure of the anus, using this agent in conjunction with cocaine. (*Gaz. de Gynéc.*, Vol. XII, page 44.)

Ichthyol irrigations in gonorrhoea have given good results in the practice of Dr. Paul Werner. He "gives an account of the results of this treatment in the eighty-two cases in which information was available. In twenty of these the disease was confined to the anterior portion of the urethra, and had lasted for from a week to two months before the beginning of the treatment. Absolute cure was obtained in nineteen cases with from six to thirty-five sittings (average, seventeen). In sixty-two cases the posterior part of the urethra was also affected, and of these a cure was obtained in only fifty-two, the number of sittings required being

from two to forty (average, nineteen). The single unsuccessful case of anterior urethritis was one of a month's duration. Here, however, the gonococci disappeared after twenty-eight douches, but as the catarrh continued the cure could not be said to be complete. It was, however, quickly affected by zinc sulphate injections. Of the nine cases where cure was not obtained, some left the hospital against advice before a cure could be effected, and in some epididymitis supervened, which obliged the douches to be discontinued. In three of them, however, the gonococci had entirely disappeared after from three to twenty-eight douches. Several cases of gonorrhoeal cystitis, some of them with pyrexia and severe tenesmus, were very successfully treated by ichthyol douches, but in some others no effect was produced and the cure was obtained by argonin. A number of cases were treated by means of douches of resorcin of the strength of 1 per cent., applied similarly to the ichthyol irrigations, but with very much less satisfactory results. As evidence of absolute cure, Dr. Werner requires the following facts: (1) That after twenty-four hours' cessation from treatment no visible discharge is present; (2) that the urine when poured from one vessel into another is free from threads; and (3) that no gonococci can be detected in the last gonorrhoeal threads found. Strictly speaking, of course, further examination should be made later, but this is impracticable with hospital out-patients." (London *Lancet*, Vol. I for 1897, page 1166.)

The gynecologists find it of marked value in the inflammatory diseases of the female genital organs.

Dr. M. Eberson, of Tarnow, Austria, who reported last year his success with a 50 per cent glycerin solution in erysipelas, now calls attention to his gratifying results after applying the following solution:

Ichthyol	.	.	.	.	.	.	.	50 parts
Distilled water	.	.	.	.	.	.	.	40 "
Glycerin	.	.	.	.	.	.	.	10 "

in trachomatous conjunctival and corneal affections. (*Therap. Monatsch.*, Vol. X, page 627.)

Dr. P. Lucani, of Pavia, Italy, reports his excellent results with a 1 to 10 per cent. application in the form of a wash and a 2½ to 10 per cent. ointment in blepharitis, simple conjunctivitis, catarrhal conjunctivitis, phlyctenular keratitis, hypokeratitis, and scleritis. (*Therap. Monatsch.*, Vol. X, page 627.)

Drs. J. Darier and Sehlen recommend the following ointment in the same class of cases:

Ichthyol	0.5 grammes (7.7 grains)
Powd. starch	10.0 " (154.3 ")
Zinc oxide	10.0 " (154.3 ")
Vaselin	25.0 " (385.8 ")

(*Therap. Wochensch.*, Vol. IV, page 764.)

Dr. G. S. Jacovidès, of Paris, France, has published (*Gaz. hebdom. de Méd. et de Chirurg.*, Vol. XLIV, page 416) his researches on the therapeutical properties of ichthyol in blepharitis and the different forms of conjunctivitis. He varied the strength of his applications according to circumstances, in accordance with the following formulas:

Ichthyol	5 grammes (77.2 grains)
Distilled water	5 " (77.2 ")
Ichthyol	3 " (46.3 ")
Distilled water	7 " (108.0 ")
Ichthyol	0.5 to 1 gramme (7.7 to 15.4 ")
Vaselin	20.0 grammes (308.6 ")

With these he obtained results often superior to those obtained by other means, but always particularly favourable.

Dr. W. Ottinger, of Exbrücke, is evidently gratified to report his success in the treatment of stings from all classes of insects by the use of ichthyol, either alone or in a lanolin or vaselin ointment (equal parts). He found all the usual devices of little avail, and therefore can speak with emphasis on his results with this agent. The swelling, pain, burning, and itching, all rapidly disappeared after applying the pure ichthyol or the ointment. The affected part with the application upon it is covered with some impervious material like India-rubber cloth. If a limb is affected, it is finally enveloped in ice. In conjunction with this external application, used pretty plentifully, Dr. Ottinger prescribes internal medication in the form of 10 drop doses of equal parts of ichthyol and a mixture of ether and alcohol.

Iodoerol is another substitute for iodoform little heard of in the current literature. It is an iodide of carvacrol. It may be well to state here that carvacrol is an oily liquid obtained by a particular chemical manipulation of oil of caraway. It has the same chemical composition as carvol (a constituent of oil of caraway)

and thymol, but different properties, and therefore it is an isomeric form of these compounds.

Dr. Arthur H. Cohn, of Milwaukee, Wis., considered it in a paper read by him before the Section on Materia Medica, Pharmacy, and Therapeutics at the annual meeting of the American Medical Association held in Philadelphia, Pa., on June 1 last, in which he states:

"Experiments have been made to grow staphylococci and streptococci on carvacrol iodid, but with negative results, thus proving it to be a true antiseptic. It may be used as a dusting powder, either pure or diluted with boric acid. In the treatment of the nose and throat it is best used in a solution of almond oil or olive oil. It has been used as a dressing for wounds to a great extent in Milwaukee in the National Home of Volunteer Soldiers. It is also manufactured into gauze. It may be used with great benefit in almost all surgical dressings—eczema, pruritus, chancres, chancroids, etc.

In conclusion, I would say that this preparation has so many advantages over iodoform, especially so of being a true antiseptic, that I sincerely recommend it to the profession and hope it will be given a fair trial." (*Journ. Amer. Med. Assoc.*, Vol. XXIX, page 464).

Iodoform has lost none of its prominence by reason of the competition of its numerous substitutes. It has been so successfully used and commented upon during the past year that it would be quite impracticable to repeat here even an outline of its successful applications.

To make up for the claim long contended by some well known observers that iodoform did not possess antiseptic properties, a well-known European firm has offered what they term "eka-iodoform," which is simply π -formaldehyde added to iodoform. Dr. Adolf Gottstein, of Berlin, Germany, has employed it and reports favourably on its use in the dressing of wounds. (*Therap. Monatsh.*, Vol. XI, page 381.)

This question of the antiseptic properties of iodoform has now been reinvestigated by Dr. P. F. Lomry, of Löwen, Prussia, who apparently has succeeded in giving an explanation of the diverse results obtained by prominent observers. He apparently confined his investigations to the pyogenic streptococci and staphylococci for the reason that the real differences occurred with these two. He found that iodoform aided the healing process, both in the case of infected wounds in dogs as well as in men. The growth

of these cultures was greatly diminished *in vitro* by adding iodoform to the nutrient medium. He claims that the negative results obtained by previous investigators are due entirely to the fact that culture media were employed in which iodoform was insoluble, whereas he found the effect is very inappreciable in all kinds of serum in which iodoform is even slightly soluble. This explains the action in suppurating wounds. Further experimentation showed that the virulence of the micro-organisms is markedly diminished and their toxins partly neutralised by this agent, and that iodoform actually stimulates phagocytosis. However, as iodoform is not claimed to be bactericidal, the ordinary aseptic precautions should be observed and the dressing renewed each day, so that the leucocytes which have accomplished their work may not remain as nutriment to the surviving microbes. (*Archiv. für klin. Chirurg.*, Vol. LIII, page 787.)

Dr. E. De Renzi, of Naples, Italy, has the following formulas to offer in the treatment of pulmonary tuberculosis:

Iodoform	2 grammes (30.9 grains))
Tannin	4 " (61.7 "))
Iodoform	2 " (30.9 "))
Naphthalin	2 to 4 " (30.9 to 61.7 grains))

Dr. Th. Faure, of Chaux-de-Fonds, Switzerland, reports that the following application,—

Iodoform	2 grammes (30.9 grains)
Collodion	31 " (480.0 ")

frequently applied to the eruption of small-pox, usually prevents all traces of pitting.

Dr. J. Tussau, of Mâcon, France, describes a pathological state which he calls "surgical iodoformism." He explains this term by reminding his readers that iodoform contains about nine tenths of its weight of iodine, and that the investigations heretofore made by others, and the phenomena fully described by them, are simply those of manifestations of acute *iodism*, not of *iodoformism*.

"The pathological state, on the other hand, which I describe under the name of *surgical iodoformism*, is a genuine morbid entity, the result of a special action of iodoform, its symptoms being invariably the same and pathognomonic."

The article is instructive to those interested in the subject. From the detailed explanation he gives, he says,—"It is a rational assumption that iodoform exerts an action *sui generis* on

the terminations of the nerves on the sensory corpuscles." He closes as follows:

"The practitioner should therefore be on his guard against the disagreeable surprises sometimes following the application of iodoform, and bear in mind that, if iodoformism manifests itself, the use of this substance for dressing should immediately cease, and the patient should be informed of the susceptibility which he has acquired in respect to this substance." (*The Med. Week*, Vol. IV, page 542.)

The toxic effects of iodoform have too abundant illustrations from all quarters, and caution is continually advised. Dr. James W. Russell, of Birmingham, England, has recently published his "Notes on Two Cases of Toxic Amblyopia from Iodoform." He concludes as follows:

"Since the cases above referred to, together with the two recorded in this paper, appear to establish the fact that iodoform is liable to cause amblyopia, it becomes a question whether its use internally is any longer justifiable. This question may, I think, be answered in the affirmative, always supposing that the treatment is of real value. In my own cases, and in that recorded by Hirschberg, recovery was complete and rapid after the discontinuance of the iodoform; in the other two, recovery was progressing satisfactorily when the last notes were taken. It therefore seems probable that if the amblyopia be early recognised and the drug promptly omitted, no permanent mischief need be feared. I have now adopted the plan of recording the vision of all those patients whom I am about to treat with iodoform, before beginning its administration; I then make periodical inquiries as to the sight, and am able to discover when any diminution is acknowledged, whether alteration has really taken place. This measure is, I find, absolutely necessary, owing to the certainty in hospital out-patient practice that any symptom frequently inquired for will sooner or later be acknowledged by the patient. I have only to add that in my cases the onset of the amblyopia was not accompanied by any other symptom." (*London Lancet*, Vol. I for 1897, page 1608.)

Iodoformin, the substitute for iodoform alluded to here last year, has not been heard of in the current medical literature of the past year.

Iodol (tetra-iodo-pyrrol), the iodoform substitute, has not been at all prominent in the current medical literature of the year. Apparently Dr. Domenico Majocchi, of Bologna, Italy, still believes in its efficacy. He now reports his favourable results with

it, in the form of a plaster, in the treatment of various syphilitic diseases. According to his observations, the maceration, inflammation, and peeling of the skin noticed when using resorcin and mercurial plasters, did not occur when using this plaster. No displacement of the plaster was noticed even after six or eight days of application. Neither did any irritation occur. (*Monatsh. für prakt. Dermat.*, Vol. XXIV, pages 460, 496.)

A combination with caffein is now offered as another substitute for iodoform, and called "caffein-iodol." It is prepared by bringing together caffein and iodol in equivalent weights in alcoholic solution. It is described as a grayish, odourless, and tasteless powder, very sparingly soluble in the usual solvents.

Its external use is to replace iodoform in all its applications. Internally it is claimed to be an efficient substitute for potassium iodide.

Iodo-Thyrin is the transposed name given to the previously known preparation thyro-iodin, and commented upon here last year. This change was made largely for commercial reasons, as some confusion with other preparations had occurred. The manufacturers add powdered milk sugar to the active principle of the thyroid gland in such proportion that one part of this preparation is equivalent to one part of the fresh gland.

In direct connection with these similar preparations, Dr. Catillon, of France, has recently described to the Société de Thérapeutique a method of preparing the active part of the thyroid in the form of a standardised preparation. He prepares it as follows: The glands are digested with pancreatin and water, in order to put it through this part of the digestive process. What remains as a residue is extracted with petroleum ether, then dissolved in diluted soda solution and filtered. After slightly acidulating the filtrate with dilute sulphuric acid, a precipitate is found as the active principle. After washing this precipitate, the amount of iodine is determined, and the requisite amount of milk sugar added to adjust its strength in order to make the amount of iodine present equal to 0.0003 grammes ($\frac{1}{200}$ of a grain) in each 1 gramme (15.4 grains) of the finished preparation.

Naturally the various uses of this preparation are those of thyroid extract, but individual reports are being made specially under this head.

Itrol (silver citrate), introduced by Dr. B. Crédé, of Dresden, Germany, along with *actol* (silver lactate), and alluded to here last year, has not been heard of in the current medical literature

of the past year, except as far as given by Dr. O. Werler, of Berlin, Germany, in the *Derm. Zeitschrift*, Vol. III, page 582.

Izal, the patented antiseptic alluded to here last year, has been practically unheard of during the past year.

Kreosolid is a new creosote preparation introduced by Dr. Denzel, of Tübingen, Württemberg, Germany. It is claimed to be a magnesium compound of the phenols in creosote (kreosote). It is described as a colourless powder, with only a slight odour and taste, and no caustic action. The dose is 500 milligrammes (7.7 grains), given four times a day. Decomposition results in the stomach yielding its constituent parts, thus offering an agreeable form of administering either creosote or guaiacol, whose ultimate function is to produce like beneficial results. It is found that 1 gramme (15.4 grains) is about equivalent in results to 2 grammes (30.9 grains) of creosote. Nothing is known of this agent in this country as yet.

Kryofin is the name adopted for a new antipyretic—closely allied to phenacetin—discovered by Dr. Bischler, of Zurich, Switzerland, and introduced by a well-known manufacturing firm in Basle, Switzerland. It is a condensation product resulting from heating together, up to 120° to 130° C. (248° to 266° F.), π -phenetidin and methyl-glycolic acid. It is presented in colourless, odourless, and almost tasteless needle-like crystals, only soluble in cold water to the extent of 1 in 600, but in boiling water, of 1 in 52 parts. If such solutions are concentrated, the taste becomes decidedly bitter.

Dr. Hermann Eichhorst, of Zurich, Switzerland, strongly recommends it as a very serviceable antipyretic and antineuralgic,—even more certain and with far less after-effects than either antipyrin or phenacetin. The dose is 500 milligrammes (7.7 grains) to 1 gramme (15.4 grains),—about one half that of phenacetin. It has been tried successfully in typhoid fever, pleuro-pneumonia, puerperal septicaemia, tubercular meningitis, post-scarlatinal febrile nephritis, facial erysipelas, the febrile condition of phthisis, and other febrile conditions. Dr. Eichhorst found it less valuable than other well-known agents in acute or chronic articular rheumatism. He, however, observed that if it absolutely failed, the other agents, like phenacetin, lactophenin, antipyrin, sodium salicylate, and exalgin, also almost always failed. In doses of 500 milligrammes (7.7 grains), three times a day, Dr. Eichhorst was able to alleviate the painful symptoms of sciatic neuralgia and alcoholic polyneuritis. Excessive diaphoresis and cyanosis were

sometimes produced in febrile cases. (*Deut. Med. Wochensch.*, Vol. XXIII, page 257.)

Nothing is known of this agent in this country as yet.

Lactophenin (π -lactyl-phenetidin)—closely related to phenacetin—is still claimed by many observers to be superior to the other well-known antipyretics. Some even go so far as to urge its greater safety than antipyrin and phenacetin. Its consideration is surely being kept prominently before the medical profession by the enterprising agents who represent its interests.

Loretin (meta-iod-ortho-oxy-chinolin-ana-sulphonic acid)—the iodoform substitute—has received little attention of any permanent value during the past year. Dr. J. Abbott Cantrell, of Philadelphia, Pa., has published his experiences with it in cutaneous affections (*The Phila. Poly.*, Vol. VI, page 293), in which he concludes:

“On the whole, therefore, I conclude that loretin has an extremely limited field of usefulness as an external application in diseases of the skin.”

Loretin being acid, in its reaction will form salts, and some of these have been suggested and formed, such as the salts of calcium, strontium, barium, and magnesium; but no definite clinical results with these have yet been reported.

Luteol—the trivial name applied to oxy-chlor-di-phenyl-quin-oxalin, a new indicator possessing certain advantages over phenolphthalein and litmus—has not been mentioned, except in the way of repetitions during the past year.

Lycetol (di-methyl-piperazin tartrate)—the uric acid solvent—has received somewhat more attention during the past year, both in the old and in this country. Dr. R. de Jollenaere, of Belgium, reports his gratifying results in two cases of chronic gout, under treatment for many years previous with quite all the recognised agents to be suggested in such cases, all giving discouraging results. This agent was tried during several attacks, and gave temporary relief in both cases. In one, however, the patient requested it to be discontinued, as it was not giving permanent relief. The other case was free from suffering six months after treatment, but was still taking 32 milligrammes (about $\frac{1}{2}$ of a grain) each day. The temporary relief in both cases, it is claimed, was so satisfactory as to make the agent of enough value to try in all subsequent cases. Dr. de Jollenaere also treated seven cases of chronic articular rheumatism with this agent, of which four were classed as satisfactory. In two cases of acute articular rheumatism, the results

were doubtful. In four cases of sciatica, two were favourable and two negative. Dr. de Jollenaere concludes that although this agent may not be properly classed as a specific (?) in gout and chronic rheumatism, still it is very valuable even as giving at least temporary or a limited amount of relief. The daily dose was from 100 to 130 milligrammes ($1\frac{1}{2}$ to 2 grains), in divided doses.

Dr. P. Hamonic has continued to use this agent for some time back, and now makes a report of his experience in the treatment of affections of the urinary passages and organs. He verifies the statement that it has seven times the solvent property over uric acid and the urates that lithium has, and acts as a most energetic diuretic. He reports on six cases of urinary lithiasis, including one particularly severe case where actual nephrotomy was being considered. He finds also that it rarely fails to relieve greatly the excruciating suffering of renal colic in a short period of time. He reports on sixteen cases of purulent cystitis. Other affections are also in his list of more or less successful results. Very lately he has had comparatively favourable results in the treatment of diabetes. No injurious effects are reported from its use wherever used.

Dr. Wettzack recommends the following formula in renal colic (*Gaz. hebdom. de Méd. et de Chirurg.*, Vol. XLIV, formulas following page 660):

Lycetol	1.5 grammes (23.5 grains)
Sodium bicarb.	0.5 " (7.7 ")

This dose is given twice daily in a glass of some mineral water.

Malarin, the new patented compound alluded to here last year as of service in the treatment of neuralgic headache and toothache, has not been heard of during the past year aside from its mention by the manufacturers.

Mallein, the tetanus antitoxin analogous to tuberculin, although undoubtedly still prominently before the profession, has not been commented on during the past year.

Menthol still finds new lines for its application. Dr. A. Morel-Lavallée, of France, recommends the following mixture to control the vomiting of seasickness:

Menthol	0.10 grammes (1.5 grains)
Cocaine hydrochlorate	0.20 " (3 ")
Alcohol	60.00 " (about 2 ounces)
Simple syrup	30.00 " (" 1 ounce)

5 grammes (1 teaspoonful) is to be given every half hour. (*Le Bulletin Médical*, Vol. X, page 1199.)

Dr. Herbert B. Whitney, in an article on "Some Hints as to the Treatment of 'Colds,'" states (*Medical News*, Vol. LXX, page 100):

. . . "During the first two or three days of a coryza, the most useful of all the preparations I have employed is a snuff, the principal ingredients of which are cocain and menthol:

R̄ Cocain hydrochlor.	.	.	.	.	.	gr. iiss
Menthol	.	.	.	.	.	gr. iv
Acidi borici	.	.	.	.	.	3 ss
Pulv. coffeae	.	.	.	.	.	gr. viii
M. Sig. Snuff (Coupard).						

"Of this, a small pinch is directed to be taken in each nostril every two or three hours. It gives great temporary relief, and I am frequently asked to have the prescription repeated. This snuff may also be used with benefit after there is an abundant catarrhal secretion. It may, with advantage, be combined with the internal use of gelsemium, or, later, with atropin."

Drs. C. Bozzolo and E. Mangianti, of Italy, treated the pruritus of jaundice with the following solution, applied to the itching parts in the form of a spray:

Menthol	.	.	.	.	2 grammes (30.9 grains)
Alcohol	.	.	.	.	20 " (308.6 ")
Ether	.	.	.	.	20 " (308.6 ")

Dr. Gaucher, of France, recommends the following, in the form of a spray, to the itching parts, in urticaria: (*Gaz. hebdom. de Méd. et de Chirurg.*, Vol. LXIV, formulas opposite page 660.)

Menthol	.	.	.	.	10 grammes (154.3 grains)
Chloroform	.	.	.	.	30 " (463.0 ")
Ether	.	.	.	.	30 " (463.0 ")
Spirit of camphor	.	.	.	.	30 " (463.0 ")

This may be used either by spray or as a lotion.

The following ointment is strongly recommended by Dr. Strangeways for instant relief in hay fever:

Menthol	.	.	.	1.30 grammes (about 20 grains)
Oil of sweet almond	.	.	.	8.00 " (" 123.5 ")
Carbolic acid	.	.	.	0.62 Cc. (" 10 minims)
Cocaine hydrochlorate	.	.	.	0.40 grammes (" 6.5 grains)
Zinc oxide ointment	.	.	.	15.50 " (" 4 drachms)

Dr. Namé prescribes the following formula for promptly relieving the pain in all forms of contusions, except bruised joints:

Menthol	. . . . .	from 3 to 6 parts
Collodion	. . . . .	“ 24 to 27 “

The following composition is recommended for pertussis:

Formaldehyde	. . . . .	2 parts
Menthol	. . . . .	40 “
Methyl alcohol	. . . . .	58 “

and is offered as a specialty under the trade name of “holzinol.”

In the new edition (fifth) of the Russian Pharmacopoeia, about to be issued, this agent is among the additions to be officially recognised.

Methaethyl (methyl-ethyl) is a new local anaesthetic introduced by Dr. G. F. Henning, of Berlin, Germany, and claimed to have advantages over ethyl chloride. It is described as a clear, colourless, neutral liquid, with an odour which reminds one of chloroform. It has a burning and bitter taste, is soluble in all proportions of alcohol, ether, and chloroform. Its flame when burning is green on the edges and leaves no residue. It consists for the most part of ethyl chloride, and small quantities of methyl chloride and chloroform. Its boiling point was found to be 10.5° C. (51° F.). The specific gravity is 0.9173 at 4° C. (39.2° F.).

Little information has yet been given aside from the above.

Methylene Blue (tetra-methyl-thionine chloride)—the anilin derivative—has received considerably more attention during the past year than the year previous, but reports are still conflicting as to its successful use in almost every affection in which it has been used. Toxic symptoms continue to be produced, therefore caution is urged, for the susceptibilities of patients differ so largely that the initial doses should be the minimum, even though the important point of purity of the agent has been previously settled in the affirmative. It has seemed to be necessary to call attention again to the distinction between methyl blue and this agent. The former belongs to the rosanilin group and chemically is sodium tri-phenyl-rosanilin-tri-sulphonate, and differs in its chemical reactions.

Little has been reported of late on the use of methylene blue in the treatment of carcinomatous growths.

Dr. Du Castel has continued systematically Dr. J. Darier's recommended treatment of epithelioma of the face for some two years,

and now records a large number of cases. He made a report at a meeting of the Paris Therapeutical Society on November 11th last. He applies a solution of

Methylene blue	1 gramme (15.4 grains)
Absolute alcohol	2.5 grammes (39.0 ")
Glycerin	2.5 " (38.0 ")

about every third day, then a 20 per cent. chromic acid solution, and again the above solution. His successful results surprised him, although recovery did not always take place, and recurrences were evident at times. He claims certain precautions are necessary to obtain the best results. (*The Medical Week*, Vol. IV, page 560.)

In the discussion which followed, Dr. H. Hallopeau, of Paris, France, reported that he was by no means satisfied with his own results in using it. Dr. C. Mazet, of Marseilles, France, reports equally good results by the same Darier method in the same affections.

Dr. Dubarry, of France, reports in detail a case of epithelioma of the face treated by interstitial injections of an average of 1 gramme (15.4 grains) of a 10 per cent. solution in distilled water without having much hope of success. In five months' time, however, the injections were stopped, and the condition was most favourable, giving every evidence of it proving to be a permanent cure. If relapses occur, he proposes to simply repeat the same treatment.

The results in the treatment of malaria still continue to be conflicting. Dr. Cardamatis, of Athens, Greece, has published a monograph on this treatment, which Dr. Laveran criticised at a meeting of the Paris Academy of Medicine held on April 13th last.

Dr. Benno Lewy, of Berlin, Germany, reports (*Berlin klin. Woch.*, Vol. XXXIII, page 996) his remarkable success in the treatment of migraine in cases which had previously defied all treatment. To counteract the irritation of the bladder, which is apt to occur, he combines it with nutmeg, as follows:

Methylene blue	0.1 gramme (1.5 grains)
Powd. nutmeg	0.1 " (1.5 ")

This dose is prescribed in a capsule, given three or four times a day. A decided blue colouration in the urine is produced in half an hour, and continues for some days over a week. Dr. Lewy classed this agent, not as a palliative one, but as a specific.

Dr. Nefédieff, of St. Petersburg, Russia, recently reported to a

local medical society his unfavourable results in four cases of recurrent typhus fever. (*Gaz. hebdom. de Méd. et de Chirurg.*, Vol. XLIV, page 743.)

Dr. G. Lemoine, of Lille, France, reported his experiments with this agent, in the treatment of pain in ataxia, at the meeting of the Société de Biologie on June 12th last. His cases were nine. In two there was no improvement; in the remaining seven there was marked decrease in the intensity and frequency of the pain. (*Gaz. hebdom. de Méd. et de Chirurg.*, Vol. XLIV, page 570.)

Dr. J. R. Philpots, of Parkstone, England, reports his experience in the treatment of rheumatoid arthritis as follows:

"In looking through the recent works on rheumatoid arthritis, I find no mention of the use of methylene blue in the treatment of this disease. In several very obstinate cases which have lately been under my care, I have administered this drug with the greatest benefit, each case showing marked improvement soon after commencement of treatment. Not only does the arthritic process appear to be altogether arrested, but the drug has a favourable influence on the general condition, improving nutrition and leading to increase of body weight. A 2 gr. tabloid is the most convenient form of administration, one to be taken twice daily after food. The patient should be warned that one of the first effects of the drug is to colour the urine blue.

"Pyoktanin (methylene violet), on the other hand, has very little effect on the urine, is not well borne, and has not given good results in rheumatoid arthritis.

"Although my experience has been limited, I venture to think that the success has been sufficient to warrant my drawing attention to this treatment, and I hope that others with more opportunities will give the method a trial." (*Brit. Med. Journ.*, Vol. I for 1897, page 781.)

Dr. William Armstrong, of Buxton, England, confirms Dr. Philpots's results as follows:

"I have read with much interest Dr. J. R. Philpots's note in the *British Medical Journal* of March 27th, as I have for some time past been giving a trial to methylene blue in rheumatoid arthritis. I prescribed it mainly in those cases in which I saw reason to suspect that toxins formed in the intestinal canal were setting up—and keeping up—irritation in the joint centers of the spinal cord. My reason for doing so was that I believed it to be a powerful oxygen carrier and a destroyer of bacilli. Cases of this class, treated by methylene blue in conjunction with the Buxton ther-

mal and galvanic baths, improved more rapidly and were less liable to relapse than those treated by the baths alone; but cases which seemed to depend upon utero-ovarian irritation, and those following influenza and other disturbances of the nervous system, did not seem to derive any increased benefit from the addition of this drug to the method of treatment employed. This seems to me to be one more proof that success in the treatment of rheumatoid arthritis depends almost entirely upon a careful search for the initial cause of the disturbance, and modification of the treatment accordingly." (*Brit. Med. Journ.*, Vol. I for 1897, page 1064.)

Dr. Paul Marie, of France, has reported at two meetings of the Paris Medical Society of the Hospitals, held on May 7th and 28th last, his good results obtained after administering this agent to a diabetic patient. He, however, admits the impossibility of determining exactly the part played by it in causing the sugar to disappear.

Drs. Marie and Le Goff offer a clinical method of determining the quantity of sugar in the blood by using a definite solution of this agent. This also was reported at the meeting of the above society on May 7th last.

Dr. G. Lemoine, of Lille, France, reported at a meeting of the Paris Biological Society, held on May 1st last, that this agent appears to have a very remarkable effect on albuminuria of a particular type. In three out of seven of his cases of acute or chronic parenchymatous nephritis the albuminuria completely disappeared in a few days.

Dr. L. Jays recommends the following form of pill in the treatment of chronic cystitis:

Methylene blue . . .	1.6 grammes (about 24 grains)
Powd. French chalk . .	2.4 " (" 37 ")
Lanolin	a sufficient quantity

These are to be made up into twenty pills, and two to four are to be taken each day.

Dr. James Moore, of Belfast, Ireland, reports in detail (*Brit. Med. Journ.*, Vol. I for 1897, page 140) two cases of first attack of gonorrhoea in which he had gratifying results with this agent. He ventures an explanation of its action, which he admits all may not accept, but concludes that his results show "that the acute stage is cut short before the mucosa and submucosa are extensively damaged, and thus the risks of serious complications and sequelae are lessened.

"If experience shows that this drug in any way diminishes the rapidity of development and virulence of micrococci in the tissues, it ought to prove a valuable adjunct to the treatment of general septic diseases."

Drs. Charles Achard and J. Castaigne, of France, have continued their investigations on the permeability of the kidneys, and now report on the use of methylene blue as a diagnostic agent in that connection. They found its excretion by the kidneys varied as the kidney was normal or pathological, and the degree of rapidity and change showed the extent of the kidney's functional activity. (*Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris*, Vol. XIV, page 637.)

Methyl Salicylate (synthetical oil of wintergreen) has quite taken the place therapeutically of the natural oil, as was to be expected after the very natural prejudices were overcome by actual and comparative trials. The internal use of both the natural and the artificial product has met with much success in the treatment of both acute and subacute articular rheumatism. Dr. Gilbert Lassere, of Bordeaux, France, reports on a four years' experience, with a total of forty cases. He prescribes the following formula:

Methyl salicylate C. P. .	1 Cc.	(16.2 minims)
Brandy	10 grammes	(154.3 grains)
Simple syrup	100 "	(about 3 ounces)
Distilled water . . .	100 "	(" 3 ")

in 5 gramme (teaspoonful) doses within forty-eight hours. He also obtained good results in two characteristic cases of gout, but acknowledges that further and more extended trials are necessary before making any assertions.

Much attention has recently been given to the external application of this agent.

Drs. Lannois and M. G. Linossier, of Lyons, France, having fully established by experiment that this agent is readily absorbed by the skin, at once turned their attention to applying it to painful joints, on compresses and well covered with India-rubber cloth to protect it from evaporation. (*La Semaine Médicale*, Vol. XVI, pages 125, 338.)

Dr. G. Lemoine, of Lille, France, and other observers have verified these results. A paper entitled "The Local Application of Salicylate of Methyl in Rheumatism," was read by Dr. Armand Siredey, of the St. Anthony Hospital, at the meeting of the Medi-

cal Society of the Hospitals of Paris on May 7th last. Drs. Lemoine and Linossier discussed it. (*Bull. et Mém. de la Société Méd. des Hôp. de Paris*, Vol. XIV, page 688.)

A more extended trial by still others is strongly urged.

Dr. Chambard-Hénon, of Lyons, France, relates the case of a woman who was rapidly relieved of an attack of herpes zoster on the nape of her neck and upper part of left side of her chest by rubbing this agent well into the healthy skin around the eruption. Five Cc. (about 80 minims) were used in each of five applications, and a cure (?) was recorded in ten days. (*Journ. de Méd. de Paris*, Vol. XVII, page 378.)

Dr. Duquaire, of France, reports successful results in the treatment of gonorrhoea by injecting the following solution:

Methyl salicylate . . .	1 gramme (15.4 grains)
Bismuth subnitrate . .	20 grammes (308.6 “)
Liquid vaselin . . .	100 “ (about 3 ounces)

These injections are called for each day after micturition, and retained in the urethra as long as possible.

Migranin (double citrate of antipyrin and caffenin) apparently is still used for the treatment of sick headache and neuralgia, but little notice has been taken of it in the current medical literature of the past year.

Naphthalin (naphthalene)—one of the hydrocarbons obtained from coal-tar—has not only continued to be employed as an efficient intestinal antiseptic, but favourable reports come from at least two observers who have obtained favourable results in treating pertussis.

Mr. Philip J. Brayn, of the Isle of Jersey, an admiralty surgeon, reports (*Brit. Med. Journ.*, Vol. I for 1897, page 1477):

“It occurred to me two years ago to try naphthalene in the treatment of whooping cough. I confess not having observed much improvement in some cases when I applied that drug; but that was owing partially to inability to thoroughly study and observe the cases under treatment. During the last epidemic, I determined to go into the treatment very carefully, and the results have been most satisfactory.

“I treated twelve cases in children in whose mothers I could in every way place confidence with regard to veracity, and whose intelligence and common sense were above the average. The ages ranged from three to eight years. The usual routine of treatment

was tincture of belladonna and potassium bromide in varying doses and naphthalene fumes inhaled continuously day and night.

"A simple method of procedure was to instruct the child's mother to make a small muslin or linen bag, containing the drug, and to suspend it around the child's neck. At other times, I ordered the drug to be well rubbed into the child's clothes. The floor of the sick chamber was also sprinkled with it.

"From careful inquiries made and visits paid at irregular intervals, I am quite sure that the frequency of the paroxysms was very much diminished, and the patients made more comfortable in every way.

"I selected the above cases, among a great many I had under treatment, not with regard to the malady, but in reference to the integrity and truthfulness of the patients' friends.

"So far as the prophylactic influence of the drug is concerned, I may note that in some families infected with whooping-cough, one or two members in each escaped infection. At present, however, I do not wish to attribute too much to the usefulness of the drug in that direction."

Dr. Claude A. P. Truman, of Reading, England, adds his testimony to the above, as follows (*Brit. Med. Journ.*, Vol. II for 1897, page 64):

"I was interested in reading your correspondent's note upon the above subject. I have used this treatment for five or six years with almost unvarying success, and I now adopt it as a routine practice. In cases where it has failed, I have often used the biniodide of mercury (internally), but with varying results. I have found naphthalin, when administered internally, to have extraordinarily good influence in gastro-enteritis in young children; and in many of their diseases, caused no doubt by the products of digestion, or rather indigestion, it will be found to 'act like a charm.'"

Naphtol (β -naphtol) is still extolled as a most efficient intestinal antiseptic. Dr. J. de Maximovitch, however, makes use of the *a*-naphtol for that purpose, in the following formula:

<i>a</i> -Naphtol	3 grammes (46.3 grains)
Chloroform	15 drops
Castor oil	100 grammes (about 3 ounces)
Oil of peppermint . .	5 drops

The dose is 15 grammes (1 tablespoonful) in port wine, beer, or black coffee with sugar. For children, 5 grammes (1 teaspoonful) is recommended.

Injections of camphorated naphthol have been used as a palliative in the treatment of sarcoma, and as a curative in tubercular peritonitis.

Nosophen (tetra-iodo-phenol-phthalein)—the iodoform substitute—undoubtedly has received more attention during the past year than in the previous one. Evidently those surgeons who have continued to use it and its bismuth salt (eudoxin) still cling to them as being superior to iodoform, but, for the benefit of the whole profession, it would be of value if those who still retain iodoform would frankly state in print why they have abandoned these comparatively new agents after trial. Can it be that they have not given a fair trial in point of time allowed to the number of cases treated, or are there objections or disadvantages which are yet unreported?

Nutrose (a neutral compound of casein with an alkali), alluded to here last year as a new German food preparation, has received practically no attention in the current medical literature during the past year.

Orexin (phenyl-di-hydro-quin-azoline)—the appetite promoter and stomachic—is still in use by those who continue to believe good results are being obtained. Some claim that it excels all the other stomachics generally used. The hydrochlorate of orexin has been practically abandoned, on account of its tendency to produce vomiting in some cases and also a burning sensation in the stomach. Also its taste and odour are against it. The base orexin itself is to be preferred, as none of the above objections are yet recorded against it.

From what has been written during the past year, there appears to be no good reason for altering the conclusions drawn here last year. To aid those interested in drawing their own conclusions, however, the following references are given:

Prof. Dennaro Scognamiglio, of Naples, Italy, reports (*Wien. Med. Blätter*, Vol. XX, page 417) on an extensive use of orexin—seventy cases with striking results as a stomachic without any unfavourable symptoms. His further trials in the vomiting of pregnancy are described as quite marvelous, even to the saving of life.

Dr. Rech, of Cologne, Germany, witnessed a case of such marked relief in the vomiting of pregnancy that he thought it well worth while publishing, although he admits that one favourable case does not necessarily determine the true value of an agent. (*Centralbl. für Gyn.*, Vol. XX, page 851.)

Orphol (β -naphtol bismuth)—recommended, like β -naphtol itself, as an intestinal antiseptic—has had few direct allusions to itself during the past year, but as its applications are those of β -naphtol itself and with better effect, many observers no doubt have made use of it without mentioning their results in connection with this bismuth salt. It is more easily administered than β -naphtol, especially to children, and does not produce the burning sensation noticed when using the latter. It appears to be especially useful in summer diarrhoea and diarrhoea attending typhoid fever and pulmonary tuberculosis. Dr. Golinier, of Erfurt, Prussia, reports on the latter application. (*Allgemeine Med. Central Zeitung*, Vol. LXV, page 1154.)

It may be of service to repeat here that the composition of orphol claims to be 26.5 per cent. of naphtol and 73.5 per cent. of bismuth oxide, and that it is to the antiseptic action of the first element and the astringent action of the second that its beneficial results are obtained when it splits up in the intestinal tract.

Orthoform is a new synthetic local anaesthetic, constituted like cocaine, and introduced by Drs. A. Eindorn and R. Heinz, of Munich, Bavaria. The reasoning and deductions made by these investigators in building up this synthetic compound on the same plan that cocaine is formed upon, will be instructive to those who are interested in the strictly chemical side of such questions, but would be hardly in place here; however it will suffice to mention that chemically it is the methyl ester of π -amido-*m*-oxy-benzoic acid. It is described as a light, bulky, colourless, odourless, and tasteless stable crystalline powder, not hygroscopic, sparingly and slowly soluble in water; sufficient is dissolved, however, to make it a serviceable *fluid anaesthetic*, and it is thus employed. It appears to be absolutely free from toxic effects and yet has marked antiseptic properties, and thus well adapted to use in the treatment of open wounds.

“When applied on the mucous membranes in the form of a powder or of an ointment, orthoform gives rise in a few minutes to slowly progressive anaesthesia. Any one may easily convince himself of this by spreading a uniform layer of the drug onto the tongue or the ocular conjunctiva. The same analgesic action also manifests itself on the raw surface of wounds and of painful ulcerations, but not through the skin or a thickened and indurated mucous membrane. Orthoform remains inactive, therefore, whenever there is no solution of continuity of the integument, as in burns of the first degree, for instance, in wounds closed by sutures, etc.

"Its analgesic action is extremely marked, on the other hand, in burns of the third degree, in all painful wounds (cancers, varicose ulcers of the leg), fissures of the lips, nipple, and anus, excoriations, ulcers of the tongue, larynx, etc.

"Taken internally, orthoform is an efficacious remedy for soothing the pain of round ulcer and cancer of the stomach, but it fails to relieve the painful sensations connected with chronic catarrh or with dilatation of the stomach, the gastric mucous membrane being intact in these cases.

"Orthoform combines with hydrochloric acid, forming with it a soluble salt. This orthoform hydrochlorate is not suitable, however, for anaesthetising the conjunctiva, or the nasal, buccal, or pharyngo-laryngeal mucous membranes; nor can it be utilised for subcutaneous injections, as it is very irritating to the tissues, owing to the acid reaction of its solutions. It may, nevertheless, be used internally in ulcers and cancers of the stomach, and also for urethral injections in cases of gonorrhoea. A patient who suffered from chronic gonorrhoea bore without any reaction an injection of a 10 per cent. solution of orthoform hydrochlorate, and the urethral anaesthesia thus obtained persisted for twelve hours. In a case of recent gonorrhoea, these injections gave rise to marked reaction every time they were tried; four days later, however, the discharge had entirely ceased.

"Orthoform being devoid of all toxic action, as shown by experiments on animals, it may be freely used on wounds and on mucous membranes. In a case of cancer of the face, for example, 50 grammes of the powder were used locally in the course of a single week without any ill-effect whatsoever; indeed, the patient experienced considerable relief from its use.

"Prof. Einhorn and Dr. Heinz assert that doses of from 50 centigrammes to 1 gramme of orthoform, or of orthoform hydrochlorate, may be given internally, and even repeated several times a day without ill-effects." (*Med. Week*, Vol. V, page 444.)

Paraldehyde (officinal) is now largely and successfully used. Occasional bad results are reported, especially when prolonged use has been made of it. Dr. G. Reingold, of Barmen, Prussia, relates a case of delirium tremens attributed to its use, presented at a clinic in Freiburg, and may be of interest to those who desire to refer to it. (*Therap. Monatsh.*, Vol. XI, page 300.)

Pellotin, the new hypnotic recently brought to the notice of the medical profession by Dr. F. Jolly, of Berlin, Prussia, has been investigated still further. Dr. Langstein, of Teplitz, Hungary,

has recently observed a case of locomotor ataxia in which 10 milligrammes ($\frac{3}{20}$ of a grain) of pelletin hydrochlorate (which will be noticed is a smaller dose than Dr. Jolly employed) was subcutaneously injected. This brought on a dangerous condition of collapse, from which the patient rallied only after the energetic application of stimulants continued for half an hour. The patient's heart was perfectly normal, and he had usually borne other agents very well, even in very large doses. Dr. Langstein desires to call attention to the fact that this simply goes to show that such agents must be handled with great care. (*Prager Med. Wochensch.*, Vol. XXI, page 446.)

Dr. Alexander Pilcz, of Vienna, Austria, has investigated this agent and published his results. (*Wien. klin. Wochensch.*, Vol. IX, page 1121.) He has tried it in fifty-eight cases of insomnia, giving about 20 milligrammes ($\frac{3}{16}$ grain) as the minimum dose. The patients were those of the principal lunatic asylums in Vienna. Perfect results were obtained in 29 cases—all the patients falling asleep within an hour and a half and continuing asleep all night. A moderate effect resulted in seventeen cases, and in the remaining twelve this agent was quite ineffectual, though of these latter Dr. Pilcz considers that four should be excluded from the test. Of the successful cases nineteen responded to the minimum dose. Dr. Pilcz was not able to observe the slowing of the pulse recorded by Dr. Jolly nor the collapse seen in one of the cases of Dr. Langstein. He was not looking for any anodyne effects. Giddiness was present only in two cases—one of these was a paranoiac with sensory hallucinations. Dr. Pilcz thought this agent of value in very many cases where others failed, and particularly valuable in being suitable for subcutaneous injection.

Pental (tri-methyl-ethylene)—the anaesthetic for minor operations—has not been commented on during the past year, and it may be that the timely warning given by some observers has been heeded.

Peronin is the name given to a new chemical salt originating in Germany and proposed as a substitute for morphine. It is described as hydrochlorate of the benzylic ether of morphine, in the form of a bulky, white, bitter powder, composed of very small prismatic crystals. It is readily soluble in water, difficultly soluble in ordinary alcohol, and insoluble in chloroform and ether.

Dr. Schröder, of Hohenhonnef-on-the-Rhine, Prussia, has published his experiments (*Therap. Monatsh.*, Vol. XI, page 4) as to

the physiological effects of this salt, and states that they are intermediate between morphine and codeine, exerting a very quieting action on the paroxysmal cough in pulmonary tuberculosis—it does not cure the cough, but simply gives relief. He reports on twelve cases in which he administered doses from 20 to 40 milligrammes ($\frac{5}{16}$ to $\frac{5}{8}$ of a grain) either in solution or pills just before going to bed each night. It is claimed to be better borne by the patient than morphine, and by inducing sleep is to be preferred to codeine.

Recently Dr. Siegmund Nowak, of Cracow, Austria, has reported (*Therap. Wochensch.*, Vol. IV, page 519) the results of his studies of this salt in eighteen cases—ten of pulmonary tuberculosis, four of chronic bronchitis and pulmonary emphysema, three of acute bronchitis, and one of capillary bronchitis.

Dr. Jakob Munk also gives the results of his recent investigations. He found that doses of 20 milligrammes ($\frac{5}{16}$ of a grain) given three times a day caused no unfavourable effects in the way of indisposition or drowsiness, but acted as an analgesic and checked the cough. When the doses were increased up to 40 milligrammes ($\frac{5}{8}$ of a grain), a quiet night's sleep was obtained, even in cases where morphine and codeine were ineffective. He has now about concluded to use this agent exclusively and expects the same good results.

Pertussis, although chiefly a children's disease, which generally passes through its regular course without serious complications, continues to receive close study by careful observers, and according to reports often its different stages have been mollified, but rarely entirely aborted. In the line of contagion some interesting observations by Dr. Weill, of France, have now been published after a study of the subject for three years. He originally claimed, and now produces some quite convincing testimony, that it is only contagious during the premonitory catarrhal stage. He has verified his results quite convincingly. On several occasions he allowed nearly one hundred young children who had not previously suffered from whooping cough to be kept in the same ward with children suffering from this affection during the whooping stage, and to continue there for more than twenty days. In one case only was the affection contracted, and in this case the child from whom the affection was obtained was in the very earliest period of the whooping stage. Again he had an opportunity to avail himself of three small epidemics with the same results. He therefore quite rationally concludes that infection ceases very

soon after the characteristic whoop begins, and that therefore in a family of children and others, it is not the patient who is already whooping, but his brothers and sisters who have not previously had the affection, who ought to be isolated.

Pharmacopoeias are gradually becoming of more intrinsic value to the medical as well as the pharmaceutical world. The medical profession generally throughout the world, but especially in the United States, gives entirely too little attention to its national standard, but it is gradually realising its previous neglect and is beginning to see how much better therapeutic results will be obtained if as much be given to the study of the basement principles of the medicaments used as to diagnosis. The one thing now being accomplished which is aiding the tendency to show more respect for the national standard of each country, is the more frequent and more scientific revisions. Revisions are now in progress in several countries. The British and the Russian works are announced for publication very shortly, having already occupied some time in their preparation. The initial steps have recently been taken for the revision of the French Codex and the Swiss and Italian Pharmacopoeias. At the meeting of the Pan-American Medical Congress, which met in Mexico last November, a representative committee was appointed to arrange the details for a proposed Pan-American Pharmacopoeia. This may be found to be impracticable, but evidently the attempt is to be made.

Phenacetin (para-acet-phenetidin), considered as a valuable antipyretic and analgesic, is now too well established to attempt to rehearse the innumerable favourable results. It has now reached that stage of its history in which no special mention is any longer made of its applications. Its abuse continues to be carried on unabated.

The following cachet is recommended in the treatment of migraine:

Antipyrin . . .	0.50 grammes (about 7½ grains)
Phenacetin . . .	0.10 " (" 1½ ")
Acetanilid . . .	0.05 " (" ¾ grain)

The caution is given that not more than three of these cachets should be taken in twenty-four hours at least at first (and the direction may be safely added—only under a physician's supervision). Another formula, in tablet form, is offered for the same purpose:

Caffein	0.065 grammes (1 grain)
Phenacetin	0.260 " (4 grains)

The following mixture is recommended by Dr. R. A. Lancaster, in the treatment of pertussis:

Tincture of belladonna . .	10 grammes (154.3 grains)
Phenacetin	5 " (77.2 ")
Whiskey	15 " (231.5 ")
Fl. Ex. of Castanea . . .	60 " (about 2 ounces)

The dose for a child under one year is 10 drops, up to ten years old 5 grammes (1 teaspoonful), given at intervals of two to six hours.

Phenocoll (amido-para-acet-phenetidin)—the antipyretic—is now little used as such, for its hydrochlorate is found to be preferable in most respects.

Variable reports are still made on its action in malaria, but those who find good results also report its successful application to hectic fever, various forms of neuralgia, as an antispasmodic, and most recently in influenza. In an epidemic of influenza in a certain locality in Italy, four hundred cases were treated with such gratifying results that this agent is to be continued permanently and exclusively.

In acute articular rheumatism the reports are also variable. It appears, however, that in most of the cases in which the pain was relieved it did not reduce the temperature. Dr. Max Ohly, of Halle, Prussia, reports his experiments on sixteen cases of acute articular rheumatism, in which it acted promptly in relieving the pain in thirteen cases. In three it failed. (*Therap. Monatsh.*, Vol. X, page 676.)

Dr. R. Guaita recommends the following mixture in pertussis:

Phenocoll hydrochlorate	0.5 grammes (7.7 grains)
Antipyrin	0.5 " (7.7 ")
Potassium bromide . .	0.4 " (6.5 ")
Syrup of orange peel .	25.0 " (about 6½ drachms)
Orange flower water .	25.0 " (" 6½ ")

He divides this mixture into four doses, to be taken at equal intervals in twenty-four hours. This is recommended for an eight-year old child. The treatment is continued for three successive days, after which the phenocoll is increased up to 1.2 grammes (about 18 grains), the antipyrin up to 800 milligrammes (12.4 grains), and the potassium bromide up to 500 milligrammes (7.7

grains), which increased doses are kept up for three days more. Then, again, another increase is recommended of the phenocoll up to 1.5 grammes (23.8 grains), the antipyrin to 1 gramme (15.4 grains), and the potassium bromide to 600 milligrammes (9.3 grains), administered in 50 grammes (about 1½ ounces) of the vehicle. Dr. Guaita reports that if this treatment be followed out the frequency and intensity of the attacks are very rapidly diminished, and it tends to shorten the duration to a marked degree.

Phenamine is a name which has been recently given to phenocoll, apparently only for the purpose of coining the new name triphenamine for the following mixture:

Phenocoll	2.6 grammes (40.0 grains)
Phenocoll salicylate	1.0 gramme (15.4 ")
Phenocoll acetate	0.4 " (6.5 ")

Phesin is the name given to a new antipyretic analogous to *cosaprin*. Just as this latter is a sulpho-derivative of acetanilid, so is *phesin* a sulpho-derivative of phenacetin. It is presented in the form of a light amorphous reddish-brown, odourless, slightly acid and acrid powder, readily soluble in water.

Drs. Zoltán von Vámosy and Béla Fenyvessy, of Buda-Pesth, Hungary, have made a study of this agent and find its antipyretic action more prompt than phenacetin, but of shorter duration, the temperature rising gradually.

Nothing is known of this agent in this country as yet.

Phthisis. The Rome (Italy) correspondent of the London *Lancet* has returned such a timely outline of "The Latest Views on Phthisis" and its primary and secondary causes, that it may be profitable to quote it here. It is given in what he calls the "full-dress discussion" in an Italian Medical Association in which the leading members took part. (*London Lancet*, Vol. I for 1897, page 214.)

"Fifteen years ago phthisis was accepted by most pathologists as co-extensive with tuberculosis. It was an infective disease determined by the action exerted on various organs by the bacillus of Koch. The objection that it could be infective and at the same time hereditary was met by the explanation that not phthisis *per se*, but the predisposition to phthisis was hereditary. The children of phthisical parents were thus particularly vulnerable in presence of the bacillus, a neglected 'cold' or a slight influenza sufficing to invite the infection. The infective power of the bacillus was, indeed, the most formidable factor in the disease.

No one was safe. Laboratory research showed the diffusion of the bacillus to be well-nigh limitless. Not only the air, but the food and drink, nay, the house furniture, the benches of schools, the compartments of railway carriages, the books of library shelves, and bank notes, all were potential or actual transmitters of the dreaded germ. Fifteen per cent. of the living harboured it; in the dead it was found in the ratio of 30 per cent. Panic at its ubiquity inspired the search for specifics against it. In spite, however, of antiseptic solutions, parasiticidal injections and immunising serums innumerable, the bacillus refused to yield, cropping up mercilessly in the sputum, to confirm what used to be ridiculed as an Italian superstition—viz., the danger of living near, or succeeding to, people given to coughing and clearing the throat. Of late years, however, the panic has died down. Phthisis is acknowledged to be eminently curable. Under sound hygiene pulmonary tuberculosis is daily being arrested. Surgical intervention often suffices to cure a peritoneal phthisis. The sputum is seen to be dangerous only in a state of perfect desiccation. Even the breath of the phthisical may be respired with impunity. The bacillus of Koch, though still a power, is no longer supreme according to many pathologists. According to others, there are concomitant bacilli even more dangerous, to which that of Koch is simply the ‘crossing-sweeper’ facilitating their entrance. Thus these observers explain the fact that in all the more pronounced cases of phthisis, there are found other bacilli; while those cases in which the bacillus of Koch is alone detected are generally mild and run an easily tractable course. The hectic fever, symptomatic of the graver forms of phthisis, is accounted for by these concomitant bacilli only. Yet another group of pathological assailants the bacillus of Koch has to confront. These would assign it a simply accidental rôle, appearing in local manifestations merely, manifestations well defined and eminently curable. The disease caused by it is nothing more than a scrofulosis, in which the glands, the skin, the cartilages, and the bones disclose its invasion, with reaction for the most part favourable. The bacillus, for example, may lie hid in some viscus of a healthy subject whose resisting power by a blow or a wound is temporarily impaired, but which soon rights itself, to the expulsion of the intruder. Phthisis, according to the consensus of debaters led by Dr. Gatti at the Associazione Medica Lombarda, being not due to the bacillus of Koch, being neither infective nor contagious, resolves itself into what it appeared to be to the former generation—a disease of nutrition, a

perversion of hygienic conditions due to causes economic, social, and others having their roots in our *modus vivendi*. The primary, the essential factor in the evolution of the phthisical state is degeneration, organic decay, while the intervention of the bacillus of Koch represents only 'unaccidente terminale,' a modification of a process already determined. In certain subjects, honeycombed by insufficient alimentation, tuberculosis is but an anticipation of the decomposition ensuing after interment. As, indeed, Virchow and Hansemann have shown, there are phthisical patients in whom the bacillus of Koch is 'conspicuous by its absence,' while there are maladies—diabetes, for example—in which tuberculosis is a complication almost invariably present. We return, then, to the pathology, the prophylaxis, and the therapeutics of our fathers—such, at least, is the outcome of the memorable discussion by the Milanese pathologists and consultants the other evening—and relegate to the first line among the causes and the cure of phthisis those factors and agents which have been temporarily pushed back into the second—factors represented by a violated hygiene, and agents recruited from the resources by which that hygiene is vindicated and restored."

Physostigmin (eserin), the poisonous principle of Calabar Bean, is recommended for the treatment of the glaucoma claimed to be so common on long sea voyages, by Dr. B. Schwarzbach, of London, W., England, who writes to the (*Brit. Med. Jour.*, Vol. II, for 1897, page 324), as follows: "Knowing that through the medium of the *British Medical Journal* the attention of ships' doctors may be reached, I beg leave to advise these gentlemen (or other medical practitioners who are in the habit of traveling extensively) to always provide themselves with eserin on long sea voyages. During four trips around the world I have had occasion to notice repeatedly attacks of glaucoma at sea, and on inquiry was always told by the ship's doctor that eserin is not to be found in the ordinary medicine chest on board. And yet, in my belief, attacks of glaucoma occur comparatively more frequently at sea than on land. Only recently, during a trip from Australia, I had occasion to observe no fewer than four cases of increased interocular tension. Some little time ago, while traveling from Sydney to San Francisco, acute glaucoma developed after a severe attack of seasickness; the sight of the lady sufferer would certainly have been lost, had I not, with the consent of the ship's doctor, performed an iridectomy then and there—and performed it under most difficult circumstances, and with instruments of rudest description.

Since that time I always carry eserin when traveling at sea, and have frequently given help with it.

"I know a gentleman who is constantly traveling between New Zealand and England, and who during the whole duration of the sea trip used to see rainbow colours around lights, etc., the pupils of whose eyes looked unusually dilated, and the intersclerotic pressure used to be $T + 2$, though repeated ophthalmoscopic inspection gave a negative result. At my advice he now applies a weak eserin installation when at sea—every third day—and with the best advantage to his eyes, and without any injurious effect whatsoever to the system. I make this last remark, as with some ophthalmic surgeons a prolonged use of eserin seems to be out of favour.

"Other ophthalmological observations at sea (such as the occurrence of an attack of neuritis retrobulbaris after sea-sickness, etc., and also why, in my opinion, sea life rather predisposes to glaucoma), I hope to be able to detail on a future occasion. At present I wish to draw attention only to the advisability of carrying eserin on long sea voyages."

Piperazin (di-ethylene-di-amine) is still being used to considerable extent and has some importance, but practically nothing has been seen of it in the medical literature of the year.

Pixol, in the form of Dr. McKeon's Syrup of Pixol Compound, has not been alluded to during the year in the current medical journals. However, the formula given here last year is known to have been tried by more than one pharmacist but without any report upon it either one way or the other.

Pyoktanin (methy-violet), the analin dye "pus destroyer," has not been much heard of during the past year. The most prominent articles written are the following: "A Clinical Study on the Use of Pyoktanin," by Dr. H. B. Young, of Burlington, Iowa, read before the Section of Ophthalmology of the American Medical Association at its meeting in Atlanta, Ga., in May, 1896. His experience is thus expressed—"occasionally very satisfactory, but more often disappointing, if not indeed aggravating." (*Jour. Amer. Med. Assoc.*, Vol. XXVII, page 1042.) In the discussion which followed Drs. G. C. Savage and Price, of Nashville, Tenn., reported a case of successful application.

The second prominent article of the year was "Blue Pyoktanin in the Treatment of Inoperable Malignant Growths," by Dr. Henry R. Slack, of La Grange, Ga., read before the Georgia Medical Association on April 21 last, in which he relates five cases and

concludes: "Pyoktanin, when properly used, is certainly a palliative treatment for cancer that deserves an honest, hopeful trial, for by its use many have been relieved and some cured." (*Jour. Amer. Med. Assoc.*, Vol. XXVIII, page 1227.)

Pyramidon is the name given to a new antipyretic and analgesic introduced as a substitute for antipyrin. It is a derivative of antipyrin by a substitution process, giving chemically di-methyl-amido-antipyrin. It is described as a yellowish-white, almost tasteless crystalline powder, soluble in ten parts of water. It is claimed by some to be much more active than antipyrin, but this claim is modified by others to the extent that it is only slightly more active. It is evidently less soluble than antipyrin, slower in producing its effects and more lasting in those effects. Its applications are naturally the same as those of antipyrin, but the same results may be produced by about one third the dose.

Dr. Wilh. Filehne, of Breslau, Prussia, has published his experimental and clinical investigations (*Berlin. klin. Wochensch.*, Vol. XXXIII, page 1061). He finds its action prompt in relieving pain of various kinds, such as headaches of a febrile nature, pain in the lymph glands and the spleen in pseudo-leucaemia, tuberculous tonitis, anaemia, and multiple neuritis. Doses of 500 milligrammes (about 8 grains) produced neither subjective nor objective effects, and therefore the recommended dose of from 300 to 500 milligrammes (about 5 to 8 grains) was found effective when given three times a day. In four cases of nephritis it had little effect except in relieving the headache in one case of contracted kidney. It was of much benefit as an antipyretic in 12 cases including cases of tuberculosis, typhus fever, leucaemia, influenza accompanying pneumonia, and the like. Its prompt action as an analgesic and its mild febrile action make Dr. Filehne think that it is entitled to further trials.

At a meeting of the Paris Therapeutical Society, held on April 7th last, Dr. Huchard reported that he had made use of this agent in twenty-four cases with results like those produced by antipyrin. He reports its toxicity in animals and advises caution.

Dr. R. Lépine, of Lyons, France, has also made experimental and clinical observations. He has used it in twenty cases with great benefit in most of them and no bad results in any (*Lyon Médical*, Vol. LXXXV, page 215).

Pyrantin (para-eth-oxyl-phenyl-succinamic acid)—the name given to the new substance obtained by the reaction between phenacetin and succinic acid (the acid obtained by distilling

amber)—has not been heard of in the literature of the past year. It gave promise this time last year of being a more important agent than any evidence has subsequently shown. It may be that further developments will be brought forward later, but for the present it may be considered as practically dead.

Quinosol (chinosol)—the neutral antiseptic compound of oxy-quinolin with tricesol, introduced as a substitute for carbolic acid, corrosive sublimate, and lysol—has had little mention made of it in the current medical literature of the year.

Dr. C. G. Moor, of King's College, London, England, reports that a 1 to 2000 solution of this agent will destroy the plague bacillus in ten minutes, and a 1 to 3000 solution will destroy it in one hour. (*Deut. Med.-Zeitung*, Vol. XVIII, page 768.)

Resorcin (officinal) has been largely used during the past year, chiefly by the dermatologists who generally find it an efficient agent. A few other uses have been made of it. The following powder has been recommended by Prof. Ewald, of Berlin, Prussia:

Resorcin . . .	4.5 grammes (about 75 grains)
Bismuth salicylate . . .	15.5 " (" 240 ")
Tannigen . . .	15.5 " (" 250 ")
Powd. sugar . . .	8.0 " (" 120 ")
Sodium carbonate . . .	8.0 " (" 120 ")

The dose advised is 5 grammes (1 teaspoonful) given every two hours.

Dr. Strangways has obtained gratifying results with this agent in hay fever, but stipulates that it is quite necessary to remove the diseased conditions in the nose, for by this means often the attack can be aborted and possibly cured when his proposed nasal wash is made use of. He advises frequent washing with the following solution:

Acetic acid . . .	0.130 Cc. (about 2 minims)
Resorcin . . .	120 milligrammes (about 1½ grains)
Common salt . . .	260 " (" 4 ")
Water* . . .	30 Cc. (about 1 fluid ounce)

Accompanying this frequent washing, hydrochloric acid is prescribed internally.

Dr. Roskam recommends this agent in the treatment of pertussis. During the past six years he has treated two hundred and ninety children by the method introduced by Dr. Moncorvo, of

Rio de Janeiro, Brazil, of applying a 2 to 3 per cent. solution of resorcin to the glottis with a fine sponge. (*Ann. de la Soc. Méd.-Chirurg. de Liège*, Vol. XXXVI, page 71.)

Resorceinol—the name given to the resulting compound obtained by melting together resorcin and iodoform—has not been heard of during the past year.

Rhubarb Root is such an important and well-known drug as it reaches the pharmacist and physician that it may be instructive to some to read a short chapter in its commercial history as given in the *Chemist and Druggist* (Vol. LI, page 333):

“The railway schemes of the Russian Government, which will in a few years’ time carry a Russian railway line into the heart of China, and the general advance of Russian influence on the northern and eastern borders of the Chinese Empire, make it very probable that early in the twentieth century some portion of the Chinese produce now carried by steamer from the treaty ports of China to the European centers of production will be deviated to the overland route through Siberia. The freight by the overland route must necessarily be an obstacle, but need not be an insurmountable one, and it is quite likely that some of the old caravan roads may be used until a point where they strike the railway. The caravan commerce between Russia and China has been an important one for many generations. At one time, as readers of ‘Pharmacographia’ will remember, the rhubarb seen in European commerce was almost entirely carried from China through Persia and Asia Minor (hence the old name of Turkey rhubarb), but later on it was brought through Northern China, Siberia, and European Russia to St. Petersburg. The history of the old Chinese-Russian rhubarb trade is almost forgotten now, but some interesting accounts of it are to be found in one or two rare books of travel. The principal of these, and the one from which most of the details given below are derived, is Pallas’s ‘Reise durch Verschiedne Provinzen des Russichen Reichs’ (St. Petersburg, 1771). Much information is also contained in the Archives of the old ‘Free Russian Trading Company,’ at Moscow. Pallas resided for some time at Kiachta, the Russo-Chinese frontier town, where the merchandise was transferred from the Chinese caravan to the Russian one, and the rhubarb examined piece by piece by a Russian Government pharmacist. Commercial intercourse between Russia and China began early in the seventeenth century, but it was not put on a properly regulated basis until 1728. At first all the trade in the rhubarb exported from St. Petersburg to

other European countries was a monopoly of the Russian Crown, and the name 'Crown rhubarb' still lingers to this day in the odd nooks of the German drug trade, as Turkey rhubarb does in English popular parlance. In 1762 Catherine II abolished the monopoly of the Crown export trade, but the business continued to flourish until the opening of the Chinese treaty ports in the first half of the century, when rhubarb, musk, and other Chinese goods found a cheaper and more convenient outlet by water.

"The 'Russian' rhubarb of Pallas's time was evidently what is now known as the 'Shensi' variety: that now called 'Canton' was even then brought into trade by the port of Canton, and known in Europe as 'Indian' rhubarb.

"Concerning the commerce in rhubarb, Pallas says in his 'Reise':

"The rhubarb is procured from the Bucharian merchants who come from the town of Selin, which lies southwestward of the Koko-Nor, or Blue Lake, on the borders of Thibet, and is subject to China, like all other towns of little Bucharina.

"The best rhubarb purchased at Kiachta grows on a chain of rocks, lofty and but sparingly provided with wood, which lie north of Selin, and stretch as far as the Koko-Nor. The good roots are distinguished by large and thick stems. They are dug up in April or May, immediately cleansed from the soil, and hung on the neighbouring trees to dry; then wrapped up in woollen sacks, carefully preserved from the least humidity, and transported upon camels to Kiachta.

"The exportation of the best rhubarb is prohibited by the Chinese, under the severest penalties. It is procured clandestinely, however, in sufficient quantities, sometimes by mixing it with inferior roots in the caravan load, and sometimes by means of contraband trade. The College of Commerce at St. Petersburg has the sole right of receiving the root, and appoints agents at Kiachta for that purpose. Much care is taken in the choice, for it is examined in the presence of the Bucharian merchants by an apothecary commissioned by government, and resident at Kiachta. All the worm-eaten roots are rejected, the remainder bored through to ascertain their soundness, and all the damaged or decayed parts are cut away. By these means even the best roots are diminished a sixth, and the refuse is burnt.

"When Catharine II abolished the crown monopoly in the export trade of rhubarb from Russia a heavy duty was put on the

root, which private traders had to pay. The root imported by the crown was sold at St. Petersburg through the intermediary of the College of Commerce for the profit of the sovereign. The current price was settled every year by the college.

“ ‘Rhubarb was taken from the Bucharian merchants at Kiachta in exchange for furs; the prime cost was about 16 roubles (32s.) per pood of 35 lbs. By adding the pay of the commissioners who purchased it, and of the examining apothecary, and allowing for other necessary expenses, the value of a pood at Kiachta amounted to 25 roubles, to which had to be added about 5 roubles for carriage from the frontier to St. Petersburg. In the year 1765, 1,350 poods were exported from Russia, valued at 65 roubles per pood, so that there must have been a fine profit left for the merchants. That seems to have been an unusually brisk year, for upon an average the annual receipts at Kiachta only amounted to 1,000 poods, of which about 700 passed the official inspection.’ ”

Roentgen Rays are assuming a position of rapidly increasing importance in the scientific world. Their application to medical use is only a very small part of the field which they now occupy, but this part alone is a complete study by itself.

At a meeting of the Paris Academy of Medicine, held on June 1 last, Dr. A. Combé communicated an ingenious application of skiagraphic methods to the bones of the face: “He hangs a delicate photographic film, which has been carefully preserved from contact with the light, upon an artificial palate modeled in vulcanite exactly to the oral cavity of the subject. This, when placed in the mouth, can be maintained in position by the closure of the jaws. The rays from the bulb are directed perpendicularly on the region it is desired to photograph, the exposure being from six to eight minutes. The tube employed is a bi-anodic bulb, giving a spark of 45 centimetres. The skiagrams obtained showed, among other things, the anterior part of the superior maxillary bone, in which the roots of the incisors and canine teeth were very clearly visible, and in the substance of which the least tumor would have become obvious. Another curious development in x-ray photography has been obtained by Messrs. Luys and David, who have exhibited at the Biological Society some skiagrams representing what they term ‘effluves,’ given off by the eye and finger in the normal condition, and their results will have much interest for oculists and dabblers in electro-biology. Messrs. Luys and David have employed a new method, which had, however, already been mentioned by Dr. G. Le Bon. It consists in the immersion of the

fingers of the subject in an hydro-quinone bath, the fingers being applied by their palmar surfaces to a plaque of gelatino-bromide of silver in the dark for some quarter of an hour or twenty minutes. As a result, the observers believe thus to have demonstrated that there emanates normally and continually from the human body during a state of wakefulness a special fluid which they consider 'the essential manifestation of life.' This phenomenon is similar to that which Colonel Rochas has recently sought to demonstrate under the name of 'externalization of sensibility.' To the imaginative all sorts of possibilities will present themselves as the result of the study of this 'essential manifestation.' By watching the variations of this nerve force taking place in accordance with the age, sex, different times of the day, different environments, and different mental conditions, assistance may be gained in the study of physiology and pathology, while the absence of 'less effluves' may possibly furnish that sign for which so many are now looking—an incontrovertible proof of death." (*London Lancet*, Vol. I for 1897, page 1641.)

Professor Diakonof reports "that he has made a varied and most instructive use of the Roentgen rays in preparing radiographs of anatomic preparations. Structures like arteries, veins, bronchi, and bronchioles may be injected with various materials more or less opaque to the x-rays, and the resulting radiograph shows with perfect accuracy their relative distribution. The best material for injecting is mercury, on account of the ease with which it can be manipulated and the fact that the same injecting fluid can be used over and over again. When it is wished to inject two sets of vessels in the same organ and to show their distribution in the radiograph, mercury may be injected into one set and a still more opaque material into the other. The following mixture is suggested: Gypsum, cinnibar, and red lead, twenty parts each; flour, ten parts; add enough water to make the mixture sufficiently fluid to flow into the smallest vessels. This mixture is too opaque, and the resulting shadows in the skiagraph too black to be recommended as a substitute for mercury, but it is useful in combination with it, as a contrast." (*Journ. Amer. Med. Assoc.*, Vol. XXVIII, page 993.)

At a meeting of the Paris Academy of Sciences, held on November 2d last, Drs. Charles Remy and Contremoulin brought forward several radiographs which represented various anatomical specimens photographed by means of these rays in the histological laboratory of the Paris Medical Faculty.

"One of these radiographs, representing the hand, forearm, and part of the arm, was obtained by a single sitting. The arteries are plainly seen, with finer details than could be obtained by dissection. Very small arterioles are perceptible, and the distribution of the large vessels can be followed everywhere in the radiograph, even through the bones. Their relations to the latter could not be better shown; the radial artery is seen through the radius, and the palmar arch through the metacarpal bones.

"Another radiograph shows the five fingers of one hand, with all the vessels perceptible, the tufts at the extremities of the fingers being particularly worthy of notice.

"The great advantage in anatomical research of being thus able to photograph the vessels without opening the limbs is obvious.

"This method of investigation promises also excellent results in respect of the circulation in the embryo.

"We have rendered the vessels visible by injecting, at the suggestion of Prof. Marey, metallic powders, suspended in various liquids; the results obtained with bronze powder in an alcoholic solution of wax are especially excellent.

"The Roentgen rays may also be employed with advantage in investigating the points of ossification, as is shown by the radiograph of a foetus before term.

"Lastly, it may be resorted to for studying the development of the teeth, which are thus rendered visible in the jaws without the artifices which have been necessary hitherto. A preparation, moreover, showing the same appearances, would by this very act of preparation, as a result of the caustic effect of the preservative liquids employed for this purpose, inevitably lose much." (*Med. Week*, Vol. IV, page 547.)

Dr. Max Levy-Dorn has made an examination, in a case of asthma, with these rays, and relates it in *Berliner klin. Wochensch.*, Vol. XXXIII, page 1046.

The further investigations into the action of these rays on pulmonary tuberculosis have not been favourable. Drs. Bergonié and Mongour, of Bordeaux, France, report that in two cases of the acute form in which alcoholism and privation complicated the condition, the influence of these rays was entirely negative, both locally and generally. In three cases, however, of the chronic form there was prompt general improvement. During six weeks, the general and local improvement was evident, but after that a further development of tuberculous material occurred. In three other cases the affection ran its customary course apparently unin-

fluenced by the rays. These two observers conclude that probably the parenchyma of the lung under the influence of these rays becomes so organised that it is far more able to resist the attacks of Koch's bacillus.

Drs. Chapteloube, Descomps, and Roulliés describe the effects of these rays upon a woman, twenty-two years old, with acute and rapidly-spreading pulmonary tuberculosis:

"There was a cavity at the right apex, the whole right lung was infiltrated, and there was generalised extension to the left lung; the sputum was crammed with tubercle bacilli. Medical treatment had no effect upon the symptoms; hectic supervened, and the patient rapidly lost ground. All medicines were accordingly left off, and the influence of the x-rays substituted. During the first fortnight of their employment, which was much resented by the patient, the general condition became worse. At the eighth application, a kind of crisis occurred with a fall of temperature, which had, however, risen again to 103.2° by the end of the fortnight. At this time there could be noticed some improvement in the right infraclavicular fossa. During the next month the rays were used from behind twice a day; this resulted in a marked drying up (fibrosis) of both lungs, diminution in cough and expectoration, and almost complete disappearance of tubercle bacilli. At the same time the general condition remained grave, and ulcers appeared on the exposed parts. The use of the rays was discontinued, and during the next three weeks a great improvement took place. The patient, who had hitherto refused food, regained her appetite, the healing of the pulmonary lesions continued, together with the diminution of the cough and the bacilli, and the greater ease and depth of respiration. The diarrhoea disappeared and the strength returned; the temperature alone kept up (101° in the evening), which the authors explain as being probably due to bacillary infection of some other part than the lungs. The authors conclude that, without discussing the question of a permanent cure, in thirty sittings the x-rays have favourably affected and almost healed lungs affected with acute tuberculosis, no other medicinal agent being employed at the time." (*Epitome Brit. Med. Journ.*, Vol. I for 1897, page 95.)

As a means of diagnosis, there appears to be more hope from the use of these rays if anything like positive statements are desired. Dr. Charles Bouchard has found that if a patient be placed between a Crookes's tube and a fluorescent screen, that side of the thorax occupied with a pleuritic effusion showed darker than on the other

side if not affected. Of course if some parts were affected and others healthy in the adjoining region, the tint would vary. Percussion and auscultation verify any consolidation present, and lead one to draw definite conclusions. In two cases, however, cavities were diagnosed as abnormal when nothing was seen by these rays. In another case, where the general symptoms pointed to the beginning of pulmonary tuberculosis, but where there were no abnormal physical signs and where the bacilli in the sputum were absent, these rays showed that one apex was more solid than the other—the expected physical signs and the bacilli appeared a few days later, thus the rays anticipated the final result. (*Semaine Médicale*, Vol. XVI, pages 513, 522.)

At a meeting of the Paris Medical Society of the Hospitals held on January 15th last, Dr. Rendu, of Paris, France, opened the discussion on the "Treatment of Acute Inflammation of the Thoracic Viscera" by the rays, by bringing before it the case of a young man, twenty years old, with an infective pulmonary complaint, the nature of which could not be exactly made out. There were evident characteristic typhoid symptoms present at first which were followed by all the signs of typical infective pneumonia, which was apparently confirmed by the presence of the staphylococcus. Drs. Du Castel and P. — E. Launois took part in the discussion. The subject is an interesting one, and will be found instructive to those who desire to look it up. (*Bulletins et Mémoires de la Soc. Méd. des Hôp. de Paris*, Vol. XIV, page 41.)

At the recent meeting of the German Congress of Internal Medicine, held in Berlin, Prussia, in June last, the subject of these rays in medicine was under discussion. Professor Benedikt, of Vienna, Austria, discussed the subject in relation to the heart. He said:

"The study of the movements of the heart by the aid of the x-rays has greatly modified our conception of the extent of the contractions and the displacement of the apex. They enable us to make out the size of the right and left cavities, and the relationship between the heart and the diaphragm; the latter may be immobilised by adhesions of the pericardium. Radiography may even be utilised for the investigation of valvular lesions, as it gives valuable information on the condition of the vessels.

"On the other hand, the study of the respiratory movements of the diaphragm by means of the Roentgen rays presents great interest. The localisation of pulmonary lesions may be exactly recognised. In Pott's disease, at the onset a definite diagnosis is

of great importance, and the use of the x-rays in this particular case is therefore of advantage to the clinician.

"With regard to the abdominal organs, it is difficult to get a good view of the intestine unless it is empty and the subject is very lean. Photographic proofs in this case give better results than the screen."

The discussion which followed is interesting:

"Dr. Levy-Dorn (Berlin).—When the aorta of an apparently healthy subject is examined, a very slight dilatation is found to exist at the convex portion of the arch, a condition which is so frequently met with that it may be normal. Aneurisms, no matter how small, are very distinctly seen, even when there are but slight clinical symptoms or none at all. I have seen a dilatation of the left portion of the arch of the aorta, which manifested itself solely by paralysis of the recurrent nerve.

"Aneurisms may be distinguished from solid tumors in contact with the aorta (tumors of the oesophagus or mediastinum) by their very distinct pulsation.

"Dr. G. Rosenfeld (Breslau).—By introducing into the stomach a long, slender sound, the x-rays enable us easily to see the greater curvature of this organ. To clearly distinguish the abdominal organs from each other, the source of the rays must not be made too strong, as the shadows are more distinct with less intense rays. A floating kidney may thus be readily seen.

"Dr. Rumpf.—It is of great importance that the source of the rays be absolutely immovable. Tubes suitable for the fluoroscopic screen differ from those used for photographic proofs.

"Dr. Scheier (Berlin).—The Roentgen rays have thrown light on the mechanism of phonation. The situation of the velum palati, of the tongue, of the lips, and of the epiglottis in pronunciation of the consonants and vowels appears to be different from what has hitherto been supposed." (*Medical Week*, Vol. V, page 304.)

At a meeting of the Paris Academy of Sciences, held on April 5th last, Drs. G. Seguy and F. Quénisset discussed the action of these rays on the heart. They stated that they had "simultaneously observed that prolonged exposure to the x-rays results in peculiar cardiac disturbances, consisting of extreme palpitation with very irregular heart action, as one of us found by repeated experiments on himself, the other by long-continued experiments on another person for the purpose of ascertaining the therapeutic effects of these rays. The patient at first experienced a sensation

of severe oppression, followed by violent and irregular beating of the heart, which became absolutely unbearable and dangerous when the Roentgen rays passed through the chest, so that it became necessary to protect the parts in question by a metal sheet sufficiently thick to intercept the radiations. (*Medical Week*, Vol. V, page 200.)

Dr. E. Aron, of Berlin, Prussia, discusses the early diagnosis of aortic aneurism with the aid of these rays, and gives two cases. He draws attention to the importance of examination by these rays in making an early diagnosis. (*Deut. Med. Wochensch.*, Vol. XXIII, page 342.)

In relation to the treatment of skin diseases, Dr. Leopold Freund, of Vienna, Austria, related, before a meeting of the Vienna Imperio-Royal Medical Society held on January 15th last, a case of naevus pigmentosus pilaris involving the neck, back, and upper part of the arm, in which he made use of these rays for treatment. Apparently the hair of the head was removed with greater facility than that growing on the naevus. Upon examination of the hairs microscopically, the roots were found to be atrophied or swollen. (*Med. Week*, Vol. V, page 47.)

In the *Bulletin of the Johns Hopkins Hospital* (Vol. VIII, page 17) Dr. T. C. Gilchrist relates a Case of Dermatitis due to these Rays, and gives an interesting table of the cases which he has been able to find in the literature on the subject. He closes with three excellent photographs illustrating his remarks.

At a meeting of the Sheffield, England, Microscopical Society, held on November 6th, last, Mr. Frank Harrison, Dental Surgeon, read a paper on the employment of these rays in the practice of dental surgery. He gave an account of a remarkable incident that occurred during his experiments which caused him some alarm. He subjected the right side of the face of a patient to these rays on a certain day. For the next twenty-five days or so many exposures were made. Following these the patient complained of itching and a burning sensation with slight redness on a certain day. The following day the redness had much increased in colour resembling erysipelas. A few days following again the hair over this part began to fall out which continued until the whole right side of the face was bald, showing glossy skin in small wrinkles. In six weeks' time the hair began to grow again and is now in its normal condition.

Prof. Thorner "has been experimenting on the action of the x-rays on various salts and foodstuffs. As a rule, he finds that

organic bodies are readily penetrated by the rays, while inorganic substances are more resistant, except boric acid, borax, lithium carbonate and the diamond; all these are readily penetrated. Foodstuffs which have a low ash offer very little resistance to the passage of the rays. Flour, honey, and sugar are practically transparent, but when mineral matter is added to them the mixture becomes markedly more resistant. Fats have the same properties. Butter mixed with salt is distinctly more opaque than the fresh article. Wheaten bread is more penetrable than that of rye, and brown bread least so of all. The author considers that this penetrability of bread depends in a great measure on the porosity of the loaf, and that therefore a more transparent bread is likely to be most digestible. Adulterations of coffee berries are readily recognised by means of the x-rays, fictitious berries made of breadcrumb being much more translucent, while berries made of clay or other inorganic matter are practically opaque. Tea-leaves that have been faced with inorganic colouring matter give a much darker shadow than the natural leaves, and even bad hazel nuts may be separated from good ones without cracking them by means of the x-rays. With silk the penetrability is inversely as the amount of ash given on incineration. Horn is more transparent than bone. Celluloid is readily penetrated. Paste stones offer distinctly more resistance to the passage of the rays than genuine diamonds." (*Pharm. Journ.*, Fourth Series, Vol. V, page 299.)

"Professor Roentgen has again made a communication to the Royal Academy of Sciences on his great discovery. He states that while the x-rays are passing through the air they traverse it in every direction. When a plate impervious to the rays is placed between a fluorescent screen and a source of the rays, so that the screen is overshadowed by the plate, the platinocyanide of barium nevertheless becomes luminous, and this luminosity is visible even when the screen lies directly upon the plate, so that one might imagine that some rays had traversed the plate; but if the screen placed on the plate is covered by a thick piece of glass the fluorescence becomes weaker and disappears completely when the glass is replaced by a cylinder of lead 0.1 cm. ($=\frac{1}{25}$ of an inch) in thickness surrounding the fluorescent screen. Professor Roentgen's explanation of this phenomena is that x-rays emanate from the irradiated air. He considers that if our eyes were as sensible to the x-rays as to ordinary light the appearance would be as if a candle were burning in a room filled with tobacco smoke. Pro-

fessor Roentgen has, moreover, invented a new apparatus for measuring the intensity of the x-rays. He has succeeded in ascertaining by means of this apparatus that the intensity of the rays is influenced: (1) by the course of the primary current; (2) by the interposition of a Tesla transformer; (3) by the rarefaction of the air in the tube; and (4) by some other agencies not yet known. He concludes (1) that the rays issuing from a discharging apparatus consist of a mixture of rays of different absorbability and intensity; (2) that the combination principally depends on the course of the discharging current; (3) that the absorption of the rays varies according to the absorbing medium; and (4) that as the x-rays are produced by the kathode rays, and have similar fluorescent, photographic, and electrical qualities, it is very probable that they are both phenomena of the same nature." (London *Lancet*, Vol. II for 1897, page 60.)

Great progress has been made all along the same lines as alluded to here last year, but the literature is so voluminous at this time that it would be quite impracticable to attempt to rehearse it all. Therefore the above few main points only have been quoted as being some of the newer ideas and channels occupying the scientific medical minds.

The public in general have become so impressed with the wonderful developments with these rays that they have often laughingly shown a tendency to make the subject take a ridiculous turn, for if almost anything is in doubt or goes wrong, they recommend to subject it to the x-rays. This application to quite every possible object is not confined to the uninstructed, for the scientists themselves now quite instinctively turn the rays on almost every object of study. The following new use for these rays was indicated by Mr. Heycock in a recent lecture reported by the London *Electrician*:

"The lecturer," it says, "drew attention to the fact that the composition of metallic alloys is and always has been a vexed question; that is to say, it has always been very doubtful whether the metals which compose the alloys form a homogeneous mixture, or whether they exist as small distinct particles which are capable of being separated from one another. Now, some metals, such as sodium, permit of the passage through them of Roentgen rays, while others, such as gold, prove to be quite opaque when submitted to the radiation from a Crookes's tube. Having made an alloy of sodium and gold, containing a very small percentage of the latter metal, he allowed it to cool very slowly, just as the solu-

tion of potassium permanganate in water had cooled. When cold a very thin section was cut, which was then radiographed. The radiograph revealed the fact that the sodium had crystallised out from the general mass. This is one of the most interesting results which have been brought about by means of x-rays, and it opens up a wide field of research in microscopic photography which will probably enlighten us considerably with regard to the true nature of alloys. The atomic weight of sodium is 23 and that of gold is 197, so that sodium is roughly eight times more transparent to x-rays than gold. The atomic weight of carbon, on the other hand, is 12, and that of iron is 56, so that their transparencies are only as 5 to 1. However, the difference is sufficiently large to warrant the x-ray research into the true nature of the various brands of steel and iron." (*Pharm. Era*, Vol. XVII, page 689.)

"The ways of the smuggler are, it appears, actually being revealed to some extent by the aid of the Roentgen rays in France, an apparatus devised by M. Gaston Seguy being utilised for the purpose. This is an adaptation of the fluorescent screen in the form of an opera-glass, the lenses being replaced by discs coated with uranium salts, and it has been called 'La Lorgnette Humaine.' The results of a demonstration at the Bercy Customs Warehouse, which was witnessed by two members of the Academy of Sciences and other notabilities, are thus summarised by the Paris correspondent of the *Daily News*: 'A case labeled China was first examined. The opera-glass showed it contained an oval dish. Another parcel, invoiced as boots, revealed a pair of ladies' boots, but along with them were two round balls. 'Open,' ordered M. Pallain. The two balls were found to be apricots sent from Algeria. A box returned as 'samples' aroused the suspicion of M. Pallain, who remarked that this word was often a euphemism for tobacco. The opera-glass was directed upon it, when three tin boxes were seen, each of which contained a hundred Egyptian cigarettes. Two boxes of English matches were packed up with them. These experiments were continued for an hour, and excited great enthusiasm.' The M. Pallain referred to above is the director-general of customs, and the packages examined appear to have been sent by parcel post. It is quite evident that the authorities will have plenty of work on their hands if they intend to examine all such parcels by radiographic methods, and delay in delivery, it may be presumed, is regarded in Paris as of quite secondary importance." (*Pharm. Journ.*, Vol. V, Fourth Series, page 32.)

"The light emitted by glow-worms is still engaging the attention

of physicists. That it possesses some of the properties of x-ray light was announced in this country last year by Dr. Dawson Turner. Professor Murako, of Tokio, working with the light emitted by 300 worms, states in a recent number of *Wiedermann's Annalen* that it behaves very much as ordinary light, except that when filtered through card-board or metal plates it shows the properties of x-rays. It thus seems that it is a mixture of ordinary and x radiations. It is also asserted to contain radiations which have the properties of Becquerel rays. Very possibly the light emitted by the animal comprises rays extending over a very long series of wave lengths. Working with Becquerel's rays an American observer has succeeded in obtaining photographic records. The object to be photographed was placed in direct contact with a photographic plate in a dark slide, and on this was placed the substance under experiment, and of which it was desired to obtain a radiograph, the whole then being protected from daylight. Some very good negatives are said to have been obtained. We are not told, however, that precautions were taken to guard against the possibility of any direct contact effect. The fact that no results were obtained when sheets of metal or glass were interposed suggests a similarity as regards transparency to the x-rays. The best results were obtained by using granulated sugar, which had been exposed to sunlight as the source of the rays. Using this substance as a source, the rays were made to traverse a thickness of over two inches of wood. In some of the experiments, two shadows at right angles to each other were obtained. It will be remembered that a similar curious effect with the radiations from a glow lamp with a broken filament was recorded in these columns at the beginning of last year." (*Brit. Med. Journ.*, Vol. I for 1897, page 421.)

Rose Leaves have been suggested by Mr. E. N. Gates, of Holiston, Mass., to mask the taste of quinine sulphate. The syrup of rose leaves was used, made with simple syrup three parts by volume and fluid extract *rosae centifolia* one part. Three trial mixtures were made, containing 130, 325, and 650 milligrammes (about 2.5 and 10 grains) of quinine sulphate to 3.5 Cc. (about 1 fluid-drachm) of the syrup. Several independent observers reported that the quinine taste is thus entirely covered up in all the mixtures tried—the peculiar bitter taste of the rose leaves only being noticeable. Immediately the mixtures are diluted with water, however, the taste of the quinine becomes evident again.

Salol (phenyl salicylate)—officinal—has been largely used during the past year, especially by the surgeon. The general practi-

tioner, however, is making use of it, with less but not discouraging success. Its quite frequent and increasing use in the treatment of acute rheumatism is apparently not without its drawbacks. Dr. H. B. Carpenter strongly advises against such use, and throws out the reminder "that it contains about 36 per cent. of carbolic acid, and in order to produce the physiologic effect of salicylic acid one runs the danger of carbolic-acid poisoning. In a case recently, in which salol was given in conjunction with phenacetin ($2\frac{1}{2}$ grains of each), not only was the amount of urine passed reduced, but the urine became bloody." (*Phila. Polyclinic*, Vol. VI, page 176.)

Dr. G. Dieballa, of Buda-Pesth, Hungary, reports a case of severe progressive anaemia in a fifteen-year-old patient, which had resisted for five months such agents as iron, quinine, bone-marrow, arsenic, and inhalations of oxygen. No cause for this condition could be determined, and as the patient was rapidly becoming worse, even to delirious attacks setting in, salol was resorted to. Auto-infection was suspected, and the doses given of salol were 1 gramme (15.4 grains) five times daily. The patient's condition began to improve immediately. Whenever the doses were suspended, the previous symptoms returned. However, the doses were gradually diminished from 5 grammes (77.2 grains) a day to 3 grammes (46.3 grains) and in three months' time it was found possible to discontinue the administration entirely, for the patient had recovered his previous good health and the anaemia disappeared.

According to Dr. Carron de la Carrière, the internal use of this agent in angina has produced very gratifying results. He has prescribed it in cases of amygdalitis, acute angina, and non-diphtheritic cases, no matter what their cause might be. It proved to be a general antiseptic and analgesic, especially effective in the region of the pharynx. It appears to mollify the pain and relieves dysphagia immediately, showing a rapid improvement in all the physical symptoms. It appears to prevent the formation of abscesses, and shortens the duration of the affection, especially when given early. The daily quantity of salol given an adult was 4 grammes (about 60 grains). Dr. de la Carrière recommends the following formula :

Salol	.	.	.	.	2 grammes (about 30 grains)
Oil of sweet almond	.	.	.	4	" (" 60 ")
Simple syrup	.	.	.	29	" (" 450 ")
Distilled water	.	.	.	74 Cc.	(" 2½ fluidounces)	

This formula supplies sufficient for three doses during a day. It has the advantage of being well borne at all times, and as it does not disturb the digestion it can be given at meal times. Particular attention is called to the fact that its use should be suspended if the urine appears dark at any time.

At a meeting of the Paris Academy of Medicine, held on March 30 last, Dr. Brossard, of Cairo, Egypt, offered a paper on intestinal obstruction resulting from salol calculi and read by Dr. Albert Robin. In one case, twelve calculi, weighing in all 4 grammes (61.7 grains), were evacuated after energetic treatment for the complete occlusion resulting, which proved to be composed of salol—the largest weighed 2 grammes (30.9 grains). The curious feature of the case was that the doses of 4 to 5 grammes (61.7 to 77.2 grains) daily for ten days in the form of powder were evacuated in these calculi of crystalline formation, showing evident solution in the intestinal tract, followed by crystallisation. (*Bull. de l'Acad. de Méd.*, Vol. XXXVII, page 358.)

Mr. C. R. Marshall, assistant professor of medicine in the University of Cambridge, Eng., writes to the *British Medical Journal* (Vol. II for 1897, page 78), as follows :

"Some time ago Professor Bradbury sent me an almond-shaped crystalline mass, possessing a yellowish colour and weighing about 1 gramme, for examination. It was said to have been vomited by a young lady who had been taking salol for some months. The drug had been ordered for intestinal flatulence, and had given marked relief. For nearly six months a cachet containing 10 grains was taken once or twice daily. Then attacks of severe colic, accompanied by vomiting, occurred, which nothing would relieve except the hypodermic administration of morphine. In one of these attacks the body in question was brought up, and at the time the statement was volunteered that similar masses had been frequently passed by the bowel. The substance had a salol-like odour, and gave the chemical tests of this compound. The melting point was almost correct, so that the substance was practically pure. The salol was stopped, and the patient improved. Dr. Bradbury tells me that no further attacks have occurred."

He goes on then to discuss the question, and concludes: "The importance of the formation of salol calculi, apart from the serious symptoms to which they may give rise, lies in the fact that the activity of the drug is markedly diminished. Even in the intestine a mass of salol can only be acted on slowly by the intestinal juices and microbes, and probably a great part passes out un-

changed. This slow action all along the intestinal tract may be an advantage in some conditions, but it is certainly not in all. The chief fault seems to be in the method of administration. Salol—and the same thing holds good for other insoluble bodies of similar melting point—ought to be rubbed up with some innocuous powder, or given in the form of an emulsion, as recommended by Sahli. In this way the activity of the drug is not diminished, and the possibility of calculus formation is reduced to a minimum." (*Brit. Med. Journ.*, Vol. II for 1897, page 78.)

A new compound of this agent, tri-brom-salol, has been given the trade name of "Cordol," containing 53.21 per cent. of bromine. It is described as a colourless, odourless, crystalline powder, insoluble in water, difficultly soluble in alcohol and ether, but readily soluble in glacial acetic acid, acetone, and chloroform. It is recommended as a sedative, antirheumatic and antineuralgic, in doses of 500 milligrammes to 2 grammes (7.7 grains to 30.9 grains) three times a day. Dr. Josef Rosenberg, of Berlin, Prussia, has carried on clinical observations with this compound. He has been able to afford sleep in patients suffering from insomnia from any cause whatever. His results have been favourable in cases of urticaria, in which the itching was so intense that sleep was practically impossible. He believes that this new compound deserves a prominent place as a therapeutic agent.

Salophen (acetyl-para-amido-salol)—containing 51 per cent. of salicylic acid—continues to be used in acute articular rheumatism, and appears to be largely confined to that use for its best results. Dr. De Wannemaeker, of Ghent, Netherlands, however, has met with very encouraging results in pruritus. He gives 4 to 5 grammes (61.7 to 77.2 grains) a day internally. He has made use of it in long-standing cases of prurigo, urticaria, seborrhoeic eczema, and in a yearly recrudescence of psoriasis. Its effects, however, were not always favourable and he is in doubt whether its effectiveness is due to the salicylic acid or the carbolic acid. The above is alluded to in his paper on "Pathology and Treatment of Pruritus," and will be found in *Wien. Medizin Blätter* (Vol. XX, page 145).

Salubrol is a new general antiseptic offered as another substitute for iodoform. Dr. Schuftan describes it chemically as di-methylene-antipyrin bromide, and is formed by the reaction between bromine and a combination of methylene and antipyrin. Apparently Dr. Max Silber, of Breslau, Prussia, was the first to employ it. He reports it as an excellent antiseptic in the form of

a dusting powder in the treatment of small abscesses, boils, burns, and the like—superior to iodoform. Experiments upon animals show it to be non-toxic and powerfully germicidal in its action (*Deut. Med. Wochensch.*, Vol. XXII, page 843). It is nearly odourless and splits up when coming in contact with the organic secretions present in suppuration and in open wounds, slowly liberating bromine. It slightly irritates when first applied in powder form, but this soon passes off and rapid cicatrisation takes place. A 20 per cent. gauze appears to be the favourable form of application, for no irritation occurs. It is reported that cicatrisation takes place too quickly for it to be of service over large surfaces, for thus healthy granulations are prevented.

Salufer—the trade name given by a manufacturer in Leeds, England, to potassium silico-fluoride—has not yet been heard of in this country. In fact nothing new has been noted even abroad.

Sanoform (di-iodo-methyl salicylate)—the iodoform substitute containing 62.7 per cent. of iodine—has been little heard of in the current medical literature of the year. However, Dr. Philipp Sternberg, of Berlin, Prussia, relates his favourable results in ninety cases. Thirty-seven were fresh wounds. After cleansing the wound thoroughly the powder was applied copiously with an occlusive bandage. The bandage was changed after two to four days at which time the wound had healed in most of the cases. If called for, a second dressing is applied when in all cases healing is accomplished. There was suppuration, abscesses, parinitium, and the like in twenty-eight cases. In these, lancing and curetting were first accomplished. After the bandage was removed the wound was found completely dry, and upon removal of the second bandage healing was complete. Fourteen cases of fissures and rhagades were treated with a 10 per cent. ointment consisting of sanoform and lanolin, and healing was accomplished in a very short time. Six cases were tamponed with sterilised gauze. (*Therap. Monatsh.*, Vol. XI, page 380.)

Somatose—the tonic and nutrient—has had comparatively little additional testimony offered during the past year, although it is still largely in use. The somatose biscuits seem to meet a very decided want and those who have used them speak highly of the results.

Dr. A. Lutaud, of Paris, France, alludes to the peculiar and powerful anti-emetic action of this agent in the treatment of persistent vomiting, either in pregnancy or after chloroform anaesthesia. He claims to have controlled a number of rebellious cases.

More than 20 grammes (4 teaspoonfuls) should not be taken per day, as otherwise diarrhoea is apt to occur. (*Journ. de Méd. de Paris*, Vol. IX, second series, page 196.)

Sozo-Iodol (di-iodo-para-phenyl-sulphonic acid)—known also as sozo-iodolic acid—the iodoform substitute, is still in use especially in the form of combination with either ammonium, mercury, potassium, sodium, or zinc. The rhinologists and laryngologists are apparently the chief users of these products. In the new edition (fifth) of the "Russian Pharmacopoeia" about to be published, this agent will be found as being one of the more recent products of sufficient value to be thus officially recognised. Curiously enough what appears to be the least used of the above compounds—ammonium sozo-iodolate—is also to be recognised.

Stypticin—cotarnine hydrochlorate—has not been commented upon during the year past.

Sulphonal (di-ethyl-sulphon-di-methyl-methane) continues to be very largely used, and the abuse of it goes on without any apparent abatement. The relief given in acute mania, epilepsy, insomnia of melancholia and night-sweats of pulmonary tuberculosis continue to be verified by reports put upon record during the year.

Those interested in following the cases of poisoning may add to their list the following: "A Case of Fatal Chronic Sulphonal Poisoning," by Dr. Richard Schulz, of Braunschweig, Germany (*Neurol Centralbl.*, Vol. XV, page 866); "A Case of Melancholia Agitans in which Poisoning Occurred," related by Mr. F. P. Hearder, of Wakefield, England (*London Lancet*, Vol. II, for 1896, page 1372); "A Fatal Case of Acute Sulphonal Poisoning," by Drs. G. Hoppe-Seyler and C. Ritter, of Kiel, Prussia (*Munch. Med. Wochensch.*, Vol. XLIV, page 355), and "A Case of Rheumatism in which Sulphonal Poisoning Occurred" (a coroner's case), related in the *Chemist and Druggist*, (Vol. LI, page 316).

Sutures. Dr. C. Haegler-Passavant, assistant to Dr. A. Socin, of Basle, Switzerland, "calls attention to the excellent qualities of wire made of a mixture of ninety-five parts of copper to five of aluminium, which has been in use for some time now in the professor's wards.

"These wires measure .22 millimetre in diameter, are strong enough to carry a weight of 3 kilogrammes without breaking, and are very flexible and convenient to handle. They are easily passed into the eye of the needle, tied into knots, and may be used for all kinds of sutures, including continuous sutures.

"The irritation produced by them is so insignificant that they may, without inconvenience, be left *in situ* for quite a long time, on condition that they have not been drawn too tight. These aluminium-bronze wires are intended mainly for superficial sutures, being unsuitable for buried sutures, especially in regions with a rich nerve supply, as their stiff ends would be apt to give rise to pain in this situation." (*Medical Week*, Vol. V, page 286.)

Tannalbin (a compound of tannin and albumin, but not so-called tannin albuminate) continues to be one of the preferable forms of administering tannin, and is still found to be markedly serviceable in infantile diarrhoea. It appears to have no special advantage over tannigen, and in fact many practitioners have made little choice between them.

Among others Dr. Traumann, of Nuremberg, Bavaria, has continued to use this agent for some time in all forms of intestinal catarrh. (*Münch. Med. Wochensch.*, Vol. XLIV, page 475.)

Dr. G. Scognamiglio, of Naples, Italy, has made use of it in eighteen cases of acute and chronic intestinal catarrh and in seven cases of renal affections. (*Wien. Med. Blätter*, Vol. XX, page 25.)

Dr. Johann Czernetschka has published a tabular report of thirty-three cases of different forms of diarrhoea in children. (*Prag. Med. Wochensch.*, Vol. XXII, pages 296, 309, and 324.)

Dr. J. Comby, of Paris, France, has used this agent as well as tannigen in all infantile diarrhoeas. (*La Méd. Moderne*, Vol. VIII, page 473.)

Tannigen (acetyl tannin), the odourless and tasteless form of tannin, insoluble in water and acids, but readily soluble in alkaline solutions, is still in use as quite a valuable agent in diarrhoea, chiefly in children. Its continuous use is apparently accomplished without any disagreeable effects. Dr. R. Hirschberg reports on it in the *Revue de Thérap. Méd.-Chirurg.* (Vol. 63, page 618.) Dr. J. Vandenberghe relates a typical case of disinfection of the alimentary canal *per os*. In 12 cases of various forms of acute and chronic enteritis he prescribed this agent in doses from 500 milligrammes to 2.5 grammes (7.7 to 38 grains) daily with gratifying results—10 of these were children and 2 adults. The administration of this agent accompanied with proper feeding saved many children in his practice. In some of his cases as many as 20 movements a day were noticed, but after his treatment with this agent the improvement was markedly rapid, resulting in complete recovery.

Dr. J. Comby, of Paris, France, has given this agent a prolonged

trial in the treatment of infantile diarrhoea. He seems to have used tannalbin as well as this agent and his most satisfactory results have been obtained in simple non-infective diarrhoea in children. As neither of these agents is an intestinal antiseptic he claims they are not adapted to cholera infantum unless some antiseptic like calomel be given with them.

Tannoform (the condensation product of tannin and formaldehyde) has been little heard of in the current medical literature during the past year.

Tanosal is a new synthetic combination of tannic acid and creosote in the proportion of 2 to 3. It appears as an amorphous dark brown powder, having a slight odour of its creosote element and a harsh taste. It is very hygroscopic and is therefore not generally seen in the above described condition, but is offered either in aqueous solution or in pill form. A solution is usually used containing 600 milligrammes (about 9.4 grains of tanosal to 15 grammes, a tablespoonful) of water, and 15 grammes of this solution is taken 3 times a day, gradually increased even at times to twice this amount.

Dr. G. Kestner, of Mülhausen, Germany, has employed it in over 75 cases, 33 of pulmonary tuberculosis, 15 of acute bronchitis, 11 of chronic bronchitis, 1 of chronic broncho-pneumonia, 5 of bronchitis accompanying infectious diseases, and 10 of simple catarrh of the throat and bronchi. He claims that he obtained his best results in the last 10 cases and that in pulmonary tuberculosis it acts fully as well as any other of the creosote preparations, however disturbing the digestive apparatus far less. (*Therap. Wochens.*, Vol. X, page 609.)

Tetronal, closely allied to sulphonal and trional, is no doubt still being used to some extent, but practically nothing has appeared about it in the medical literature of the past year.

Thioform (so-called bismuth di-thio-salicylate), a combination of bismuth, sulphur, and salicylic acid, offered as a substitute for iodoform, is now apparently used only to a limited extent. Aside from the use the dermatologists make of it, it is being employed as an intestinal antiseptic in 400 milligramme (about $6\frac{1}{2}$ grain) doses 2 or 3 times a daily.

Thiol, synthetic ichthyol, has been practically unnoticed during the past year. The only prominent mention is that of Dr. Wirz, of Kaisersesch, Germany, who states he has made excellent use of it for a year back in place of ichthyol in many cases. He is convinced that it is a valuable substitute for ichthyol, especially as its

lack of odour makes it of prime importance when employed about the face. (*Therap. Beilage der Deut. Med. Wochensch.*, Vol. XXIII, page 43.)

Thiosinamin (allyl-sulpho-carbamide) has still kept to the front in the treatment of lupus. The results of Dr. Hans von Hebra, of Vienna, Austria, have now been confirmed by Dr. Van Hoorn through further clinical and bacteriological researches. There are still those, however, who believe that it is not as efficient as claimed, and even Dr. Van Hoorn only recommends it of value in lupus when applied locally.

Its most marked value, however, appears in its action upon scar tissue. In this line the valuable report of Dr. Sinclair Tousey, of New York city, was alluded to here last year. Now Dr. Richard C. Newton, of Montclair, N. J., has followed up Dr. Tousey's lead, and fully confirms his results. He remarks: "The remedy is yet too new for its proper place in therapeutics to be known, but my own experience, which is limited to two cases, has led me to think very favourably of it." (*N. Y. Med. Journ.*, Vol. LXV, page 380.)

Dr. Newton's results were given at a meeting of the society of the alumni of the city hospital on November 11th last, and the discussion which followed will be found in the *New York Medical Journal* (Vol. LXV, page 397).

Thyroid Extract has lost none of its prominence during the past year, but much careful study has been given to it. The literature on this subject continues to increase very rapidly, and some points have been very definitely established as to its value. The summing up of Dr. R. Lépine, of Lyons, France, last year is practically true to-day, but the most recent and excellent summary of the results up to date is given by Dr. Francis P. Kinnicutt, of New York city, in his article "The Therapeutics of the Internal Secretions" contributed to the discussion upon "Internal Secretions" at the Congress of Physicians and Surgeons, held at Washington, D. C., on May 5th last. He closes with a bibliographical list of references which are of much value to those who desire to study the subject in detail. (*Amer. Journ. Med. Sciences*, Vol. CXIV, page 1.)

Among the most recent new applications, the following only may be mentioned. Dr. Gabriel Gauthier, of Charolles, France, writes of the use of this agent as a means of consolidation in fractures. He was led to try this treatment in retarded consolidation of fractures by its well recognised effects in disordered nutrition of osseous tissue. He points out that Professors Hanau and Stein-

lein had noticed, as far back as 1895, that repair was notably delayed and callus was formed in much less amount in dogs with experimental fractures treated with thyroid extract than in healthy dogs, and based his experiments on this supposed fact. He relates two cases in which he apparently met with success :

(1) A strong, healthy country girl aged 15, broke her leg (*sic*) in the lower third. The fracture was simple, with over-riding of the fragments, which were easily reduced. The limb was put up in plaster of Paris. Union did not take place, in spite of the administration of phosphate of lime, rubbing of the ends of the fragments, etc. When 110 days had elapsed without consolidation taking place, Gauthier prepared from the thyroids of young sheep a glycerinated juice, a teaspoonful of which represented 1 gramme (about 15 grains) of thyroid substance. Of this the patient took from six to ten teaspoonfuls a day. During the first two or three days she complained of intense headache, flushing of the face, giddiness, and a feeling of suffocation, but a fortnight after the commencement of the fracture was consolidated, and a month later she could walk about as well as ever. Careful palpation failed to reveal any abnormality in the thyroid gland. The total amount of thyroid substance taken was 120 grammes. (2) A healthy man, aged 48, suffered a fracture of the radius. The limb was put up in plaster. After three months there was no consolidation. Thyroid treatment was begun and continued for between three and four weeks, the total amount of active thyroid substance taken being about 160 grammes. Consolidation was then established. In this case, too, the thyroid gland was, as far as could be made out, perfectly normal. Gauthier, while admitting that two cases are insufficient to prove the value of the treatment, thinks the results in the cases which he records suggestive and encouraging. He adds that whenever thyroid treatment is employed the practitioner will do well, whenever possible, to extract the thyroid himself instead of leaving it to the butcher to do. Young sheep should be chosen for the purpose. That animal has two thyroids; hence two incisions should be made, one on each side of the trachea. If a median incision is made, especially in a very young animal, the operator is likely to take the thymus instead of the thyroid. (*Lyon Méd.*, Vol. LXXXV, pages 296 and 359.)

Dr. R. R. Stawell, of Melbourne, Victoria, has published his notes of 7 out of 9 cases in which the administration of this Extract acted efficiently as a galactagogue, increasing both the flow and quality of the milk. He remarks :

"While very fully alive to the danger of making generalisations based on only a few clinical observations, it seems to me that there is sufficient evidence that thyroid extract is an apparent galactagogue in certain cases." (*Inter-Colonial Med. Journ. of Australasia*, Vol. II, page 177.)

Thyro-Iodin—the name given to the compound which has recently been isolated by Prof. G. Baumann, of Freiburg, Germany, from the thyroid gland of the sheep—has not been alluded to under this head to practically any extent throughout the past year. Previous notices have been repeated from time to time, but no new matter has been noticed. Possibly the work has all been classed under Thyroid Extract.

Toxins (meaning all the morbid substances produced by living beings) have gradually become quite a study by themselves. Dr. H. Hallopeau, of Paris, France, read a paper before the Twelfth International Medical Congress in Moscow, Russia, on Toxins in Dermatology. He claims that the essential condition of the production of toxins is cellular activity; to each cellular action belonged the genesis of products that were characteristic of it, and might remain incorporated with the anatomical elements, become accumulated in the ambiant tissue, penetrate the lymphatic circulation or that of the blood, and become primarily or secondarily eliminated with the products of secretion; whence the possible appearance of morbid symptoms, either in a limited territory of the external integument, on various parts of its surface, or in its totality. It might become developed in subjects who generated toxins or in other living beings to whom the noxious product was transmitted. The subject of toxins was a very vast one, since it comprised not only all the venoms or poisons, but also all the products of secretion and of assimilation of living organisms and of the parasites which multiplied in them; besides, the tissues and especially the normal liquids of each living species might become noxious to other species.

Dr. A. Gautier, in studying these products from a chemical and biological point of view, had divided them into three principal classes: Leucomaines, ptomaines, and toxins properly so-called. We must take into consideration, he said, in the pathogenic interpretation of the toxins, not only the nature of the agent, but also that of the material presented by the affected subject by reason of his constitution, of his age, and of the conditions in which he happened to be at the time he was exposed to the noxious action. The toxins might be exogenous, endogenous, or of mixed origin.

The exogenous toxins comprised the venoms, the poisons, and the liquids and tissues of other animal species. Their action was exercised near the place of entrance under the form of erythema, vesication, suppuration, urticaria, purpura, more rarely gangrene, sometimes dyschromia, such as that which characterised the action of the pediculi pubis, and abnormal sensations, more frequently pruriginous or burning; it might make itself felt from a distance, or become generalised over the entire cutaneous surface.

The endogenous toxins might proceed from troubles in the cellular functions or from absorption of the products of normal or altered secretion. The products of cellular function might become noxious either from their excessive quantity or by their alteration, under the influence sometimes of an hereditary or acquired predisposition, sometimes from a transitory or lasting alteration of the internal medium which constituted the humor; this alteration might be itself of exterior origin, accidental, or provoked by a trouble in some function of the organism.

“Among the products of visceral origin which might give rise to cutaneous alterations were thyroidin and the substances which accumulated when the thyroid body was destroyed, the secretion of the suprarenal capsules, the abnormal substances that were engendered during the menstrual period, etc. The products of secretion of which overabundance, alteration, or insufficient elimination was the cause of poisoning included, especially, bile, glucose, and the materials of the urinary and sudoral secretions. Tommasoli, said Dr. Hallopeau, had demonstrated the influence of the auto-toxins on the genesis of the hyperkeratoses.

“Regarding toxins of mixed origin, those that engendered the microbes introduced into the organism should be considered as such, for, if the agent which produced them came directly or indirectly from outside, it engendered them with the aid of elements found in the cells or in the liquids of the organism. The fact, said Dr. Hallopeau, was very evident in the fermentations of the digestive tract, that was incessantly invaded by numerous microbial colonies which secreted there toxins at the expense either of nutrition or of the products of secretion. The organism was protected against them especially by the epithelium and by the liver. The mouth was frequently the seat of infectious absorption, and this was a cause of cutaneous alterations in pyrexia. The absorption of the toxic products elaborated in the dilated stomach was the cause of acne, of eczema, and of urticaria; the rose spots of typhoid fever were due to the action of toxins developed in the intestine.

"The mode of action of certain toxins might be very diverse. That of tuberculosis might remain localised around the microbial centers and give rise either to an anatomical tubercle or to other isolated and limited neoplasms which might spread from one place to another, and might provoke at a distance various other manifestations of tuberculosis, such as Barthoëlemy's follicles, the so-called acne cachecticorum, and acne scrofulosorum, inflammation of the solitary or agminated glands, complicated or not with pemphigoid eruptions, and persistent papulo-erythematous eruptions. The pseudo-exanthematic manifestations of erythematous lupus should also be interpreted in the same sense; and it was probably the same of the acute erythematous eruptions which were observed in glanders, leprosy, and mycosis, the toxins intervening, in all probability, in the genesis of eczema, psoriasis, purpura, and pemphigoid eruptions that were not trophoneurotic. Dr. Hallopeau concluded by stating that the toxins exercised a great influence in the genesis of skin diseases, but that it remained to determine the exact chemical constitution of each one of them." (*N. Y. Med. Journ.*, Vol. LXVI, page 609.)

The use of the toxins in the treatment of malignant growths has been carried on in Prof. Czerny's clinic in Heidelberg, Germany.

"Twenty-seven cases were treated according to the method of Coley. Of these 27 cases, 10 were carcinomata, and 17 sarcomata (7 round-cell, 3 spindle-cell, 3 lympho-, 2 angio-, 1 osteo-, and 1 melano-). The following deductions were drawn: 1. In carcinomata the results were completely valueless. 2. In sarcomata, only very exceptional cases showed any result. 3. This questionable advantage was equalised by the dangers of poisoning as well as by the increase of the tumors in other cases.—XXV. German Surgical Congress." (*N. Y. Med. Record*, Vol. LII, page 207.)

At a meeting of the Paris Biological Society held on July 24th last, Dr. A. Charrin exhibited an experimental double monster produced by the injection of toxins into the mother. He presented two guinea-pigs, one white and the other yellow, which apparently were growing together at about the middle of the bodies. They had three ears, one of which was double, and eight limbs, two being on the back. The x-rays showed as is usual in such cases perfect symmetry, and all parts of the body were seen to be double below the skull. Dr. Charrin stated that he had been carrying on this line of investigation for some eight years past, producing quite a variety of anomalies, such as harelip, club-foot, dwarfism, etc. He, however, very rightly does not feel justified

from his past experience in asserting that there exists any necessary relationship of cause and effect between these anomalies and the toxins injected. (*Comptes Rendus hebdm. de Séances de la Société de Biologie*, Vol. IV, page 770.)

Trional (di-ethyl-sulphon-methyl-ethyl-methane), closely allied to sulphonal, is rapidly replacing sulphonal, the bromides and chloral hydrate, especially in this country and in France. Those who have used it longest claim it to be safer, more rapid, more lasting and deeper in its hypnotic effects than the whole list of other agents. It acts promptly in much smaller doses and often succeeds when all the others have failed. One of the most enthusiastic practitioners reporting during the past year is Mr. J. Arthur Browne, of Guilford street, London, W. C., England, who has published "A Note on Trional," (*Brit. Med. Journ.*, Vol. I, for 1897, page 782) as follows:

"A safe, efficient, and easily administered hypnotic is a distinct addition to our armamentarium, and as fulfilling these conditions, the result of a six months' constant use of trional may be of interest.

"I have given it to produce sleep in cases of pneumonia, bronchitis, alcoholism with delirium, insomnia from mental worry, and other forms of nervous insomnia, and I have invariably found it satisfactory. It is rapid in its action, and it has these advantages over sulphonal or the bromides, that it is more certain and does not produce the disagreeable sequelae of sleepiness, lassitude, and depression on the day following its exhibition. Nor have I observed any derangement of the digestive system in connection with its administration. An initial dose, gr. xx or xxiv, may usually be reduced to xv or less, and in this way trional becomes invaluable for breaking a pernicious habit of sleeplessness, where a few good refreshing nights may restore the normal habit of sleep. Even in cases of confirmed insomnia, which have been treated unsuccessfully by chloral, paraldehyde, and the whole gamut of hypnotics, each drug having in turn to be increased in dose until it finally loses all power or becomes dangerous, trional in my hands has afforded marked relief without apparently any ill effect, and has given tranquil, refreshing sleep without any increase of the initial dose.

"One patient, a retired navy surgeon, a museum of complaints—mitral insufficiency, gout, eczema, albuminuria, and marked emphysema—who has had every known hypnotic for his obstinate insomnia, has been taking by my advice trional 15 to 20 grains for

the last five months almost every night. He has never had to increase the dose, and I have never detected anything but a good result from his continued use of the drug. I am confident that his heart has been much benefited by the regular sleep, and his nocturnal attacks of dyspnoea are now unknown. I find trional is easily taken in cachets or suspended in hot milk or water."

The chief drawback to this agent is the urobilinuria occasionally caused by it—at times it becomes excessive, but rarely so.

Dr. L. Kämpffer, of Werneuchen, Germany, reports (*Therap. Monatsh.*, Vol. XI, page 112) that sometimes cerebral excitement, instead of sleep, will be induced. It was noticed especially with cancer patients of an advanced stage.

Poisoning cases are still recorded, and the precaution is again urged that whenever trional is being given for a prolonged period an occasional interruption in its administration for a day or two or of rapidly reducing the dose is advisable, until there is a temporary or complete elimination of it from the system.

Triphenin, the name given to one of the newer antipyretics, analogous to phenacetin, has not been heard of in the current medical literature of the past year, and possibly has passed permanently out of notice.

Tuberculin (parataloid) was continuing on its beneficial course as a diagnostic agent of value, even though there were a few dissenting observers, when Koch's new compound was announced, which practically monopolised the attention of all interested observers. So much has been written on this one point of the diagnostic value, particularly of the now older tuberculin, that only a few prominent references can be given here for those who would study the subject in detail.

Dr. Sandberg, of Bergen, Norway, writes (*Brit. Med. Journ.*, Vol. II, for 1896, page 1108) of this agent in surgical diagnosis, and gives the clinical results only of 13 cases. He concludes: "If we now summarise the results of the treatment with tuberculin in these cases, it is at once clear that tuberculin is a reliable diagnostic agent in surgical tuberculosis, but with regard to this there has been heretofore no difference of opinion. The dispute has been regarding the therapeutic value of the remedy. My opinion is that in my cases the results obtained might equally well have been obtained by any other mode of treatment. I dare not in any special case blame the tuberculin for the bad result, as the patient who now feels best was the one injected with the greatest quantity, in all about 130 mg.; he looks remarkably well and is quite stout. I

do not, as said before, attribute this to the tuberculin, but think it proves that the remedy need not necessarily have any injurious effects, either locally or generally. But in my opinion its therapeutic value in the tuberculous diseases of the joint is proved. As, however, it cannot be proved to possess any curative power in the treatment of tuberculous joint diseases, it ought to be struck out as worthless. As an exception it might in certain other cases of local tuberculosis, such as the one instance of epididymitis mentioned above, have some significance in a therapeutic respect, otherwise its value is only as a diagnostic."

At the annual meeting of the British Medical Association, held in Montreal, Canada, last September, Dr. James T. Whittaker, of Cincinnati, Ohio, read a paper before the section of medicine on "Generalisations from Six Years' Use of Tuberculin." (*Brit. Med. Journ.*, Vol. II, for 1897, page 1053). He concludes: . . . "treatment must be persistent, and good judgment must be used in dosage. Rather too little than too much. I have never seen any bad results from the use of tuberculin, because I have always endeavoured to secure a slow tolerance, so that individuals who react at first to a few milligrammes become later insensitive to one hundred times as much; in fact, at last to 1,000 milligrammes. The evils ascribed to it I believe to be due to the disease itself, for I have seen them as often before the use of it. But it is easy to conceive that the patient would suffer under excessive reactions, and that repeated excesses might do permanent harm. But *ex abusu non arguitur ad usum*. It is a maxim of the law, good also in medicine, that we may not from abuse argue against use.

"The highest value of tuberculin is the diagnostic value, which is supreme, and which enables us to distinguish the disease at the start, as a tuberculosis, before the development of sepsis or other complications which go to make up that composite picture which we call phthisis."

Dr. A. Chauffard, of Paris, France, writes (*The Medical Week*, Vol. V, page 63) on "Simple Pneumothorax and its Diagnosis by Tuberculin," in which he relates at some length his mode of proceeding in the treatment of one case. He concludes:

"As far as I am aware, this is the first time that this method of diagnosis has been resorted to under such circumstances. The result is a degree of certainty which is not obtainable otherwise. Some of the cases collected by Galliard even appear to me doubtful, and when I find cases of this affection complicated by serous or septic effusion, or by dry pleurisy, that is to say, phenomena

due to infection, I am loth to believe that there is merely rupture of an emphysematous lobule, without any infective lesion of the pleura. Be this as it may, the case to which I have called your attention is instructive both from a theoretical and practical point of view." . . .

"There should be no hesitation, therefore, in certain well-defined cases, in endeavouring by the use of tuberculin to arrive at a degree of certainty in respect of the diagnosis, which is not obtainable by other methods at our disposal. A clinician indeed cannot afford not to utilise the advantages accruing from laboratory experiments."

Dr. J. M. C. Mouton, of Leyden, Holland, claims that this agent is not such a valuable one for diagnostic purposes in human tuberculosis, although undoubtedly so in that affection as observed in cattle. He relates the details of having injected 12 patients with this agent, varying the dose between $\frac{1}{2}$ to 1 milligramme ($\frac{1}{128}$ to $\frac{1}{64}$ of a grain). In one case only he gave as large a dose as 3 milligrammes (about $\frac{1}{25}$ of a grain). In 7 cases he noticed a reaction, but he gives the details of the whole 12 cases and discusses the questions as to how much tuberculin should be employed, the rise of temperature to be looked for as constituting a reaction, the question whether non-tuberculous patients present a reaction, and whether tuberculous patients give no reaction, and lastly whether there is any danger in such injections. (*Munch. Med. Wochensch.*, Vol. XLIV, page 579.)

Dr. Theodor Kasperek has published his results in an important series of investigations on healthy and tuberculous cattle. He made use, in a comparative way, of human and bird tuberculin. He found that it required 8 times the quantity of bird tuberculin to produce the same effect in an experimental guinea pig as a given dose of the human product. Naturally he found that much depended on the body weight of the animal. After taking these precautions he appears to have demonstrated that the tuberculin reaction was constant in diseased as distinguished from non-tuberculous animals. His investigations will be interesting to those who desire to follow up the subject. (*Wien. klin. Wochensch.*, Vol. X, page 623.)

Mr. James W. Wilson, of Aberdeen, Scotland, has published a small pamphlet on "Results of the Use of Tuberculin" with 3 temperature charts, giving a description of the attempts to eradicate tuberculosis by means of this agent. (*Brit. Med. Journ.*, Vol. I for 1897, page 421.)

The following resolution was passed at a meeting of the Brighton and Sussex Medico-Chirurgical Society of England in April last, which it might be well to imitate in this country:

“‘That preference, in the opinion of this society, should be given in obtaining milk supplies to such farmers and dairymen as guarantee that their cows have been properly subjected to, and have failed to react to, the tuberculin test for tuberculosis.’

“It was subsequently decided to send a copy of this resolution to the local press and to the local governing bodies. The resolution appears to us one that might well be passed by every medical society throughout the country. Apart from any immediate practical effect it will have a wide educational influence, which is certain in the future to bear fruit. The more attention is drawn to the immense value of tuberculin as a means of detecting bovine tuberculosis, the better for the public, and indirectly for both butchers and farmers. Butchers can, by insisting on a warranty, protect themselves against the possible confiscation following the slaughter of diseased animals; and farmers, when brought face to face with the practical problem, will find that it is to their advantage to apply the test to their cattle, to carefully isolate the reacting animals, and to disinfect and limewash the stalls which they have left. By these means there is every reason to hope for a great diminution of bovine tuberculosis in this country; and it is not unreasonable to expect along with this a reduction in *tabes mesenterica*, etc., among children and invalids. We understand that in Brighton one enterprising dairy already advertises the fact that all cows from which its milk is supplied are guaranteed free from tuberculosis as proved by the tuberculin test. This is a matter of great importance to doctors who have to order milk for delicate persons and for children; and it may be hoped that other dairymen will speedily follow suit.” (*Brit. Med. Journ.*, Vol. I for 1897, page 993.)

As to the work accomplished in this country on this diagnostic line, only one reference will suffice here although many might be given. Dr. E. L. Trudeau, of Saranac Lake, N. Y., has written an article on “The Tuberculin Test in Incipient and Suspected Pulmonary Tuberculosis,” in which he remarks:

“The importance of making an early diagnosis in case of tuberculosis cannot be too strongly emphasised. While studies in the autopsy room have shown how often incipient tuberculosis is healed in man without its presence having even been suspected, clinical observation teaches daily how powerless we are to deal

with the disease in its advanced stages, and how a latent pulmonary tuberculosis may be transformed into a hopeless and rapidly fatal disease when the unrecognised tuberculous process has gone on to ulceration, and when secondary infection has supervened. . . .

"No evidence in connection with the tuberculin test as applied to man and animals has been forthcoming thus far from those who have made use of it which would tend to sustain the general impression that this method is necessarily dangerous and tends invariably to aggravate the disease, and my own experience has developed nothing which would seem to confirm this impression." (*The Medical News*, Vol. LXX, page 687.)

Owing to a typographical error discovered later, Dr. Trudeau wrote to correct as follows :

"I am made through a typographic error to say 'The first injection should not exceed five milligrams,' whereas the text should read, 'The first injection should not exceed five-tenths of a milligram.'

"As the use of a small initial dose is an essential feature of the method I have employed, and as the injection of so large an initial dose as five milligrams might result in producing very unpleasant symptoms, may I ask you to correct in your next issue this unfortunate mistake ?

"In order to make the matter plain, allow me also to repeat the following sentence from the original article : 'The adoption of an initial dose so small as to guard against the possibility of producing violent reactionary symptoms, and a graded increase of subsequent doses within such quantities as are known never to produce reaction in healthy individuals, would seem to afford the best protection against unpleasant results and misleading evidence.'" (*The Medical News*, Vol. LXX, page 748.)

In regard to the new tuberculin preparations of Prof. Robert Koch, of Berlin, Prussia, most American practitioners have already become familiar with the comments of their domestic brethren, therefore it may be profitable to confine these comments here to some of the expressions offered by foreign observers. For the benefit of those who may desire to study this subject systematically it may be of service to have a record that Prof. Koch's original announcement is to be found in the *Deut. Med. Wochens.*, Vol. XXIII, page 209. Copied in French, it will be found in *La Semaine Médicale*, Vol. XVII, page 117. Again, in English, it appears in *The Medical Week*, Vol. V, page 169.

Prof. Hans Buchner, of Munich, Bavaria, has published (*Munch. Med. Wochensch.*, Vol. XLIV, page 299) a very interesting discussion on this new preparation of Koch in which he expresses great hope for its future.

Dr. Campana, of Italy, reports that his experience leads him to conclude that if gradually applied this agent is never harmful and that it is of marked benefit in long-standing cases of lupus and tuberculous infiltrations. He makes a point of the necessity of getting rid of any septic condition found to be present. He finds the thermo-cautery necessary to destroy any nodules whenever they make their appearance. If external developments of tubercle appear he advises tuberculin as well as surgical treatment.

Dr. Bussenius, of Berlin, Prussia, reports (*Deut. Med. Wochensch.*, Vol. XXIII, page 441) on 19 cases in which this new agent was used, 4 of lupus, 12 of laryngeal tuberculosis, 2 of uncomplicated pulmonary tuberculosis, and 1 of asthma. His results were very encouraging and he proposes to push his trials further.

At a meeting of the Berlin Dermatological Society held in July last Prof. Lassar demonstrated 5 cases of lupus treated with the new tuberculin in accordance with Prof. Koch's directions. He could not go so far as to state that the question of "cure" was accomplished, but surely the new agent had a favourable influence on lupus without disturbing the general conditions. Its action was irregular, however, and time must elapse before any definite report can be made. He deplored the high price asked for it at this time.

Dr. F. Schultz, of Bonn, Prussia, states (*Deut. Med. Wochensch.*, Vol. XXIII, page 445) that the time has been too short yet to give any definite conclusions as to its value. He employed it in 9 cases. He was pleased to report that there were none of those ill-effects such as were noticed even when small doses were given of the old form of tuberculin. In 1 case an apparent tuberculous laryngitis made its appearance during treatment and caused a discontinuance of the treatment on account of the patient's nutrition. In another case intestinal disturbance developed so that the treatment was discontinued in this case also. No noted change was observed in 4 other cases. Again, a dry pleurisy as well as the general condition improved in another case. In the remaining 2 cases there was evident improvement—one of them after developing a laryngeal perichondritis markedly improved.

Drs. Malcolm Morris and Arthur Whitfield, of St. Mary's Hos-

pital, London, England, have published a preliminary note on "Six Cases of Lupus Vulgaris Treated by Koch's New Tuberculin," concluding as follows: "We may say in conclusion that without committing ourselves to a definite judgment as to the value of this new remedy, we should have no hesitation in recommending it in any case of lupus vulgaris in which the constitution is not hopelessly broken down. In recommending it, we should be careful to warn the patient that he must not look for any miraculous effect. It is clear that a sufficient length of time must be allowed for the operation of the remedy if it is to be effectual; how long that may be it is impossible to say at present. As regards the production of the immunity aimed at by Koch, that is obviously a very difficult matter to test in the human subject.

"Finally, we may be allowed to express the hope that the new tuberculin may soon be made more easy to procure, and less costly than it is at present." (*Brit. Med. Journ.*, Vol. II for 1897, page 207.)

Dr. Doutrelepoint, of Bonn, Prussia, has treated 15 cases of lupus—12 in his clinic and 3 as out-patients. He soon found it desirable to increase the dose more gradually than stated by Koch. He noticed a rise in the temperature and other symptoms occurring when very small doses comparatively were given. He never repeated his injections until the temperature was brought down to normal. In 7 of his cases a very marked reaction was obtained after the injection. He preferred to add 20 per cent. of glycerin in place of the saline solution in those cases. He verifies the observation of others that the age of the tuberculin is apparently of importance in causing the noticed rise in temperature. (*Deut. Med. Wochensch.*, Vol. XXIII, page 537.)

Prof. Juan L. Hohn, of Cadiz, Spain, reports on 4 cases treated with this new agent, and his conclusions are that the new tuberculin even in the highest degree of dilution, always causes reaction, though the intensity may vary. Koch's statement cannot, he thinks, be reconciled with clinical facts, and he considers this new agent "impossible" as a therapeutic agent. (*Epitome of Brit. Med. Journ.*, Vol. II for 1897, page 31.)

Dr. Slawyk, of Berlin, Prussia, has made 50 injections in the clinic of Dr. Heubner. He gives full details of his first 2 cases only and states that no certain conclusions can be drawn as to the value of this agent, for the time is yet too short. (*Deut. Med. Wochensch.*, Vol. XXIII, page 473.)

Dr. W. Wörner, of Berlin, Prussia, has treated 8 cases—4 of

lupus, 1 of scrofuloderma with pelvic abscess, and 3 of early pulmonary tuberculosis. In one of his cases of lupus marked improvement was observed,—2 others which he had scraped before the agent was injected showed no recurrence. In the case of scrofuloderma, prompt cleaning off and even healing of the ulcers was accomplished although these ulcers were of long standing. Practically no effect whatever was observed in the cases of pulmonary tuberculosis. However, Dr. Wörner feels encouraged to extend his trials further in small doses. (*Deut. Med. Wochensch.*, Vol. XXIII, page 476.)

Dr. L. Seeligmann, of Hamburg, Germany, reports one case of tuberculosis of the skin and generative organs with favourable results. (*Deut. Med. Wochensch.*, Vol. XXIII, page 476.)

Dr. F. M. Sandwith, of Cairo, Egypt, records 2 cases of pulmonary tuberculosis with the following conclusions: "If all lung cases react as easily as mine, the injections might be used as a method of diagnosis more delicate and less dangerous than the old tuberculin. At present one is a little shy of a remedy which is to be increased in dosage from $\frac{1}{500}$ milligramme to 20 milligrammes—*i. e.*, the minimum dose is 10,000 times smaller than the maximum. To become popular the new remedy must be made easy to obtain, less costly, and must be diluted in a less cumbersome way, if 'the dilution is always to be prepared at the time it be used.' The tuberculin itself is painless, but the glycerin in the solution causes a little stinging." (London *Lancet*, Vol. II for 1897, page 600.)

Mr. Frederic Eve, of London, England, reports on 8 cases of surgical tuberculosis and states: "My own personal impressions of the results of the new remedy may be summed up as follows: Some slight although no markedly favourable influence may be exerted in cases of early tuberculosis of joints or in those in which no evidence of softening of caseous material exists. But the effect where caseous material has broken down, and especially if the disease has become septic, is negative. The subsequent course of the cases described below will be carefully watched.

"It cannot be said that the new remedy is altogether free from the drawbacks possessed by the old tuberculin of producing pyrexia and constitutional disturbance. In nearly every case a considerable rise of temperature occurred after one or two milligramme doses had been reached, and sometimes before. After this the duplication of successive doses, recommended by Koch, had to be given up for a more gradual increase. The pyrexia in

some cases was very great, amounting to a rise of 7° F. Other unpleasant symptoms follow the administration of larger doses, such as vomiting, malaise, headache, and prostration. No local reaction was observed. In several instances abscesses formed at the seat of injection, although strict antiseptic precautions were enjoined. The number of these may in a measure be explained by the fact that during the progress of the trial we had several changes of resident officers." (London *Lancet*, Vol. II for 1897, page 704.)

Other observers criticise quite severely the action of this new agent and rehearse the same drawbacks alluded to by some of the above, but not a few of an opposing nationality take this opportunity to throw discredit on Koch's work and attempt to minimise the good points in their anxiety to show up the weak ones. This surely is not a true scientific spirit and simply reacts in the end on the ill-natured dissenters.

Dr. Jos. O. Hirschfelder, of San Francisco, Cal., has published in the *Occidental Med. Times* of Sacramento, Cal. (Vol. X, pages 682 and 731), a still further modification of this agent which he calls "Oxytuberculin" on the theory that recovery from tuberculosis depends essentially on an oxidation process. He treats tuberculin with hydrogen dioxide, and administers this modification in very large doses. He finds that the most suitable cases for treatment are those in which cavities have not yet formed, and especially those of laryngeal tuberculosis, where the improvement may be directly observed with the laryngoscope. A tuberculous ulcer on the back of a medical man's hand healed in a short time under the local application of oxy-tuberculin, after all other remedies had proved useless. Dr. Hirschfelder gives a detailed account of eight cases of pulmonary tuberculosis where the bacilli disappeared and the patient's general health improved in the course of the treatment. He states that he has also cured cases in a more advanced stage and promises to publish his results at some future time, the object of the present communication being only to demonstrate that the antitoxin is practically an oxidised toxin. According to him, pneumonia, empyema, and streptococcus infection are also capable of being treated by their respective oxy-toxins, and the same is probably the case in all infectious diseases. He has also made experiments with carcinoma, but the number of cases is too small to, as yet, justify a definite expression of opinion.

Drs. E. L. Trudeau and E. R. Baldwin, of Saranac Lake, N. Y., have made an appeal for "The Need of an Improved Technic in

the Manufacture of Koch's 'T. R.' Tuberculin" (*The Medical News*, Vol. LXXI, page 257):

"During the past three months we have been able to repeat at the Saranac laboratory Koch's recently published method relating to the immunising fluid, and to carry through several times, with our own virulent cultures, the processes of manufacture; following closely the rather meager details given by its inventor." . . .

"Without any personal or more general experience, however, of the ultimate immunising effects of this method, it would seem that unless by repeated centrifugation or some other means we can rid the new tuberculin entirely of living tubercle bacilli, we are hardly warranted in applying it as yet to the treatment of human beings."

Tussol (antipyrin mandelate), containing about 55 per cent. of antipyrin, has been practically unheard of during the past year. A few comments have appeared, but they will be found to be repetitions of last year's reports.

Uranium Nitrate has received little attention during the past year; in fact, practically the only mention aside from what was alluded to here last year is a paper by Dr. Ebenezer Duncan, of Glasgow, Scotland, on "The Treatment of Diabetes Mellitus by Nitrate of Uranium," read before the section of medicine of the British Medical Association at its meeting in Montreal, Canada, in September last. He gives the clinical history of 5 cases with charts and concludes: "After careful consideration of all the facts of these cases, I have formed the opinion that the diminution of the urine and of the sugar in these cases, and the improvement in the weight and in the general health and strength of these patients is due to a stimulating effect produced by the uranium salt on the sugar-consuming cells of the human body. This effect may be either direct or indirect through trophic nerve centres. The sugar formed from the food of the patient is no longer excreted, and as the patient gains in weight and muscular strength it must have been consumed in adding to the nutrition of the tissues. It is true that by physiological experiments it has been proved that outside of the human body the uranium salt retards the digestion of starch, and forms an insoluble compound with albumen, and on that ground Dr. West thought it likely that its action in diabetes is due to the effect it has in checking the rapid digestion of starch, and of some forms of albumen. The difficulties I have in accepting that theory are, first, that my patients appeared to digest their food quite normally, and even rapidly, as shown by the frequent meals they asked for; and in the second place, the large amount of sugar

of milk taken in these cases would ultimately have overflowed into the urine if it had not been taken up by the sugar-consuming cells. I am of opinion that the cases in which this remedy will prove most useful are those of neurogenous origin, and, therefore, it may form a useful test in the differential diagnosis between neurogenous and pancreatic and other forms of diabetes. In the latter class of cases I do not think it will be of any value." (*Brit. Med. Journ.*, Vol. II for 1897, page 1044.)

In the discussion which followed Dr. James Tyson, of Philadelphia, Pa., said "that almost 20 years ago he first used nitrate of uranium in the smaller doses recommended at that day, not exceeding 2 grains three times a day. Then he met Dr. West's paper, and was much impressed with it, and immediately placed several cases upon the drug. After what seemed to him a fair trial he had discontinued it as failing of its purpose. He had not, however, been able to increase the dose beyond 5 grains three times a day, because of its producing looseness of the bowels. He noted that Dr. Duncan reached a dose of 15 grains three times a day. In one bad case attended by stubborn constipation he had given it without producing the effect he hoped for, namely, the relief of constipation. This case subsequently died.

"Dr. Saundby apologised for having been absent during the reading of the paper, but he might be permitted to say that he, too, thought he had satisfied himself 17 or 18 years ago of the uselessness of uranium nitrate, but the remarkable paper of Dr. West led him to reconsider the question, and he had placed a large number of patients on this remedy in doses extending up to 30 grains daily. As a result of this experience he regretted to have to conclude that in uranium nitrate we have no specific for the treatment of diabetes."

Urotropin (hexa-methylene-tetramin), formed by the union of formalin and ammonia, has received little attention during the year except from its introducer, Dr. Arthur Nicolaier, of Göttingen, Prussia, who no doubt desires to add any testimony as to its value which he can bring by his continued use of it.

Weights and Measures by the decimal (metric) system has made good progress during the past year, for not only does the already proclaimed edict render the adoption of the system in Russia sure after the stipulated date, but its permissive use in Great Britain is now practically accomplished. There are of course quite a number in England, who still object to any change, and some even propose "to combine the best features of the two systems," without at

all appreciating the fact that such a hotch-potch and confusion would be produced that it would be far better to simply defer any further action whatever until the complete change could be accomplished. But the report has already been made that the bill legalising the system in Great Britain has now passed both houses of Parliament and only awaits royal assent.

Scientists, chemists, and pharmacists have repeatedly acknowledged the benefits to them of the use of this system, but now even the surgical profession is recognising the fact, for the Council of the Royal College of Surgeons in Ireland have resolved in future to require examination candidates to make calculations in chemistry, pharmacy, and therapeutics in metric terms.

It is interesting to note that the state department at Washington, D. C., has received from Bluefields, a town of the Mosquito Territory, Nicaragua, an official statement to the effect that invoices of goods for that port will not be received by the authorities unless made out in the metric system of weights and measures.

Xeroform, another substitute for iodoform, is a compound of nearly equal proportions of tri-bromo-phenol and bismuth oxide, producing chemically tribromphenol bismuth. It is presented in a form not unlike iodoform, of a fine yellow, nearly odourless (odour like iodoform but less pronounced), practically tasteless, non-irritating, non-toxic powder. It is reported to have powerful germicidal properties, is not affected by exposure to the air or light, and may be sterilised. It has been described by some of its enthusiasts as "the iodoform of the future," having obtained gratifying results in gynecological practice and skin affections.

Dr. Theodor Beyer, of Vienna, Austria, has written upon its use in minor surgery. He recommends further trial.

Dr. Charles Greene Cumston, of Boston, Mass., has published a note on its efficiency as a surgical antiseptic and remarks:

"In closing this short note I would strongly recommend this substance to the profession as a safe and sure antiseptic, and in many respects superior to iodoform or other powders of this class." (*Boston Med. and Surg. Journ.*, Vol. CXXXVI., page 37.)

Dr. Josef Grünfeld, of Vienna, Austria, also writes at some length on its use in surgery, relating the condensed clinical history of many of his cases.

Dr. Hugo Fink, of Vienna, Austria, relates his continuous experience for almost six months with this agent in place of iodoform, always obtaining gratifying results. (*Wien. klin. Rundschau*, Vol. XI, page 331.)

MEMOIR OF WILLIAM THOMPSON LUSK, M. D.¹

By AUSTIN FLINT, M. D., of New York County.

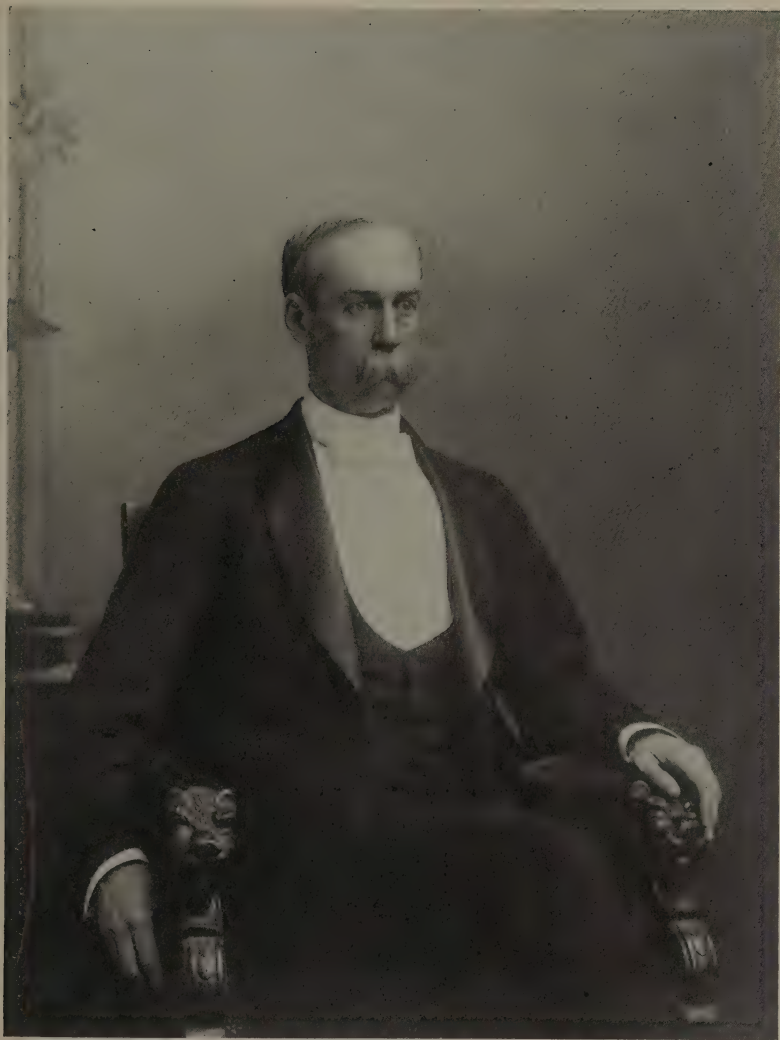
William Thompson Lusk was born May 23, 1838, and died June 12, 1897.

The death of a truly great and good physician, at the zenith of his fame and in the full development of his powers, is indeed a loss. On June 12, I saw Dr. Lusk, in full vigour and health, at work in his private hospital. An hour later, his gentle spirit had passed away, and his useful and labourious life was ended.

From the time of his graduation in medicine in 1864 to the hour of his death, he had devoted his best energies to the study and advancement of the science of medicine. The history of his professional life has been written by himself. The thousands of physicians who had the benefit of his instruction will long hold him in grateful remembrance; and the public institutions with which he was connected will long feel the influence of his wise counsels and faithful and disinterested work. His associates and personal friends may well say, "we shall not look upon his like again." The honours which he received at home and abroad engendered no feeling of envy in the hearts of his friends and professional associates, but were regarded as merited recognition of his valuable services to science and humanity. His sturdy honesty of purpose, with his delicate sense of honour and exquisite gentleness of character and manner, impressed all with whom he came in contact; and his friends, as well as he himself, were as much astonished as grieved at any evidences of antagonism or ill-will, which few positive and fearless characters are fortunate enough to escape.

The memory of Dr. Lusk should be peculiarly dear to the Fellows of this Association. When it was deemed wise by certain of us, in the interests of the whole profession, to organise the State Medical Association in 1884, Dr. Lusk was one of its Founders. In the same year, he participated in the foundation of the County Association, and signed the articles of incorporation in 1890. He was president of the State Association in 1889 and contributed

¹Read at a meeting of the New York County Medical Association, Oct. 18, 1897.



WILLIAM THOMPSON LUSK, M. D.

largely to its scientific proceedings as well as to the work of the County Association. In all discussions and controversies within the profession, when necessary, Dr. Lusk had the courage of his convictions, but without malice and with charity for all. He readily forgave every slight or injury, fancied or real.

With Dr. Lusk's brilliant public career since 1864, I am entirely familiar, and the life of his early manhood is consistent with the later character we knew and admired. Having passed the two years previous to 1861 in the study of medicine and the allied sciences in Heidelberg and Berlin, his patriotism recalled him in the hour of the nation's peril, to enlist as a private in the Seventy-ninth Highlanders, New York Volunteers, in 1861. He served as private, second lieutenant, captain and assistant adjutant-general until late in 1863, and participated in many important engagements. I made his acquaintance when he was in command of a detachment in Gramercy Park during the draft riots of 1863. In 1863-'64, he completed his medical education and was graduated at the Bellevue Hospital Medical College. After graduation, he studied in Edinburgh, Paris, Vienna and Prague. He practised medicine one year in Bridgeport, Conn., in connection with Dr. Hubbard. In 1866, he became a permanent resident of the city of New York. In 1867, he became my pupil and prepared himself to teach physiology, occupying the chair of physiology in the Long Island College Hospital, from 1868 to 1871. In the year 1870-'71, he lectured on physiology in the Harvard Medical School, and at the close of that session, he was appointed professor of obstetrics and diseases of women and children in the Bellevue Hospital Medical College, which professorship he filled until the time of his death. In 1889, he was elected president of the faculty.

With all his great acquirements, Dr. Lusk was modest even to the point of diffidence. It may be said, perhaps, that this quality was so marked that the value of his instruction was not at first fully appreciated, but it was not long before he assumed great prominence as a public teacher. The same quality influenced the early part of his literary career. Although he had ably edited the *New York Medical Journal*, in connection with Dr. James B. Hunter, from 1871 to 1873, and before writing his book on "Midwifery," had published many valuable papers, he long hesitated to attempt the preparation of a systematic treatise. I urged him to write a text-book on obstetrics with a persistence and insistence that prevailed at the end of two years. In 1881, he pub-

lished his great work on the "Science and Art of Midwifery." This work immediately took its place as the best text-book on the subject in the English language. He laboured on it faithfully to the time of his death, and improved and extended it in subsequent editions. It has had four American editions and has been translated into French, Italian, Spanish, and Arabic.

The publication of this book, particularly of the later editions, marked the culmination of the author's fame as a teacher and writer. Honours were heaped upon him. He received the degree of LL. D. from Yale university; he was elected honorary fellow of the Edinburgh and London Obstetrical societies; corresponding fellow of the Obstetrical societies of Paris and Leipsic; corresponding fellow of the Paris Academy of Medicine, etc. He was no less famous as a practitioner and was consulted largely in the city of New York and elsewhere. His frequent visits abroad, where he often read papers before learned societies, made his foreign friends acquainted with his charming personality. He was taken away in the height of his fame and prosperity.

No eulogy of mine can add to the nobly earned and well deserved reputation of Dr. Lusk; but I esteem it a precious privilege to pay this tribute to his memory which lives in the hearts of his thousands of pupils and tens of thousands of readers. He was a true and reliable friend and had no enmities, a most accomplished physician, an original thinker and observer, a labourious and successful investigator and a gentleman in the highest sense of the word.

REMARKS BY DR. J. E. JANVRIN,

Pres. N. Y. County Med. Asso'n.

The tribute which Dr. Flint has so beautifully rendered to the memory of our friend, Dr. Lusk, will find response in the hearts of all who knew Dr. Lusk at all intimately.

I wish personally to pay a short tribute to the memory of one whom I had known well for the past twenty-five years.

During all this time we have been associated together in the New York Obstetrical society and the American Gynaecological association. In the many scientific discussions which have taken place in those bodies, Dr. Lusk, when present, has always taken an active part, and we have all listened with marked attention to his wise and conservative thoughts, always expressed in such plain and telling words. Every member knew that whatever Dr.

Lusk said was never said for effect. His statements were the result of careful study and mature reflection.

It has been my good fortune to meet Dr. Lusk quite frequently in consultation during the past fifteen years, both in private practice and at the Skin and Cancer hospital. When I became the gynaecologist of that institution some thirteen years ago, I asked Dr. Lusk to become a consultant. He accepted the position, and held it up to the time of his death. In the early years of my service there, when performing the then comparatively new operation of vaginal or abdominal hysterectomy for cancer of the uterus, I always had his moral support and frequently his active assistance, and it was always a pleasure to listen to any suggestions which he made.

Unselfish, modest, kind, and sincere, and with all that these characteristics imply, his scientific attainments made him one whom his associates liked to honour, and his intimate friends loved. The death of such a man, at the height of his fame, creates a vacancy in the ranks of the medical profession which it is difficult to fill; and this Association has lost one of its brightest intellects and one of its loveliest characters.

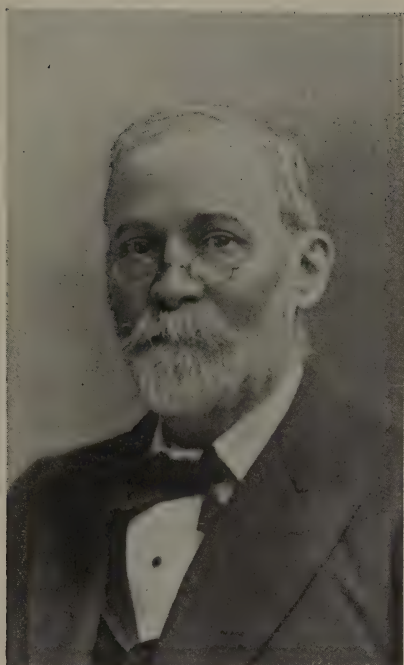
MEMOIR OF J. LEWIS SMITH, M. D.¹

By JOHN SHRADY, M. D., of New York County.

Dr. Job Lewis Smith, the youngest of five children, was born in Onondaga County, N. Y., October 15th, 1827. His American ancestor, Sergeant John Smith, was one of the founders of Milford, Connecticut. His grandfather, Lieutenant Job Smith, paymaster of the Fifth Connecticut line, and a participant in the battles of Germantown, Monmouth, Stony Point, and other engagements, married Elizabeth Keeler, of Norwalk, Conn., whose two brothers were starved to death on the British prison ships. She herself had vivid remembrances of her family's flight from Norwalk on the approach of the ships, and of the view of her blazing home during the Tryon raid. It is not much wonder, therefore, that Lewis Smith, their son, the father of Dr. Smith, volunteered in the War of 1812, despite his age, and with a musket about his only accoutrement. This immediate ancestor was a man of mark, once sheriff of Onondaga County, N. Y., and in 1829 one of its four members of Assembly.

Doctor Smith received his education at the public schools and at Homer academy. In 1849 he was graduated from Yale—a type of the usual collegian, who was wont to discuss the freshest gossip of the gods, on benches grotesquely hacked, and in apparel usually earned by piece-meal. We may well imagine how, with the memory of the boyhood farm, of a widowed mother, and with the story of Galileo in mind, he cast a backward glance or two upon his Almer Mater, determined that, though his future be marked by obscurity, it should never be smirched with dishonour. “Not greatness, but worth,” was the reiterated injunction of a mother who lived to count ninety-seven years. He was then entering upon the tramp of his life, with certain hazy resolves of never opening a road that he would not stop to pave. He was to be deluded into no fitful attempts with deflections from his main desires, but was to be absorbed into a force directed to a focus. These are the divine visions of us all, but *his* faith was destined to keep all these aspirations in the catalogue of his richest posses-

¹ Address before the New York County Medical Association, October 18, 1897.



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sions. His alchemy was destined to end with the smelted gold not so much of commerce as of proud service to humanity; in all other regards a tranquil and safe livelihood was to be the climax of his endeavour.

Dr. Caleb Green, of Homer, and Drs. Miles Goodyear and Frederic Hyde, of Cortlandt, N. Y., were at different times his preceptors, for a bias towards botanical study had begun to incline him towards therapeutics. While attending the Buffalo Medical School, through the influence of the late Dr. Austin Flint, then his more immediate tutor, he was appointed an *interne* at the hospital of the Sisters of Charity, in Buffalo, N. Y., where he served for one year, before receiving his diploma from the College of Physicians and Surgeons, New York, in 1853.

The faculty of this college, then located in Crosby street, consisted of the following: Drs. John Torrey, Joseph M. Smith, John B. Beck, Chandler R. Gilman, Willard Parker, Robert Watts, Valentine Mott, Alexander H. Stevens, and Alonzo Clark, along with Dr. Charles E. Isaacs, by common consent *the* Demonstrator of Anatomy. They were all congenially near to their graduating class, numbering fifty-eight members, of whom, perhaps, about one tenth survive. At this period, the somewhat prosy teaching was more didactic than clinical, for the profession adhered rather strongly to dogmas, and had scarcely begun to break away into specialties. The trees were there but the graftsmen had not yet come. The road led at that time through the forest, rather than over the "culture bed." Learning smacking of continuous moderation was to be had only in the gross and there was, as may be guessed, more anatomy than biology, although even thus early there was much dealing with results by the methods of the accountant. All this granted, the preceptors claimed for themselves a reverence for the pet theories which they dispensed; there remained much that was suggestive of further investigation. Many of this class of 1853, by sheer additions to their text-books, have achieved somewhat more than mere approaches to fame, for many details were eventually deprived of their tawdry mockeries.

The incidents of Dr. Smith's domestic life were pathetic. His "Willie" died of diphtheria in his tenth year, and led him to a deeper study of that disease. Another son, a physician and namesake, died (in 1889) widely mourned, on the threshold of his career. His son-in-law, Dr. Frederic M. Warner, who died of typhoid fever (October 9, 1895), also had a share in his nearest

affections. These were sore afflictions to a widower, who, when he himself died, had been bereaved for nearly twenty years ; but, amid all these sorrows, most touching was his religious resignation. He was one indeed of that brave band who assuage their griefs by a greater devotion to duty. Of his entire family, there now remain four daughters, one of whom is the widow of Dr. Warner, and another is the wife of Dr. Henry C. Hazen. These all feel, without belittling his self-effacement, that he was indeed a patriarch in the full practice of the virtues of his office.

From the time when he received his medical diploma, onward to June 9, 1897, the date of his decease, Dr. Smith's life was marked by unabated industry, both in the line of original studies and the self-imposed exactions of his profession. These last he continued to the very verge, where bald-heads are mocked by children. He wrote copiously, made autopsies almost constantly, taught clinically, and read papers on request. He knew it not, but his wisdom was too sterling to be hoarded. His custom of thorough and frequent revision before authoritative presentation, even from the earliest period, cost him many hours, which might have been given to rest, or at least to relaxation. With the zest of an artist, collate, condense, and obliterate he would, for he was his own severest critic. At last, when weary of the familiarity, he would give up to the printer only to follow in the trail of the proof-reader. Thus between his small debts and bustling work, it may be truly said that his very being was in his vocation, and that he saw but little else to engage his attention in the busiest of metropolitan cities. In fact, this very singleness of purpose, with no temptations to stray, has saved us from a ponderous chronology. In lieu thereof we have a smooth monotony to greet us with a charming grace. Still with the awkward courtesies belonging to studious pursuits, he was happy, nay, almost jocund, in his frailties of submission to the inevitable, and forgetfulness of wrong. A placid, amiable temper sustained him in all discomfitures, a quiet, affable smile, with a deep suggestiveness, being his best equipment. Hankering not at all after controversy, he was a bit of a coward too, and apt to leave the mob behind, since for him neither demagoguery nor Quixotism had any allurements. Virtually at this time he had no other plans than such as may have pertained to a liberal profession and an unending pupilage.

From Dr. Smith's title-page of the "Treatise of the Diseases of Infancy and Childhood," a text-book in most of the English speaking colleges, with the added honour of a Madrid publication in

1890, we learn that he was Curator of the Nursery and Child's Hospital, New York; Physician to the Infants' Hospital, Ward's Island; Consulting Physician in the Class of Children's Diseases, Out-Door Department of Bellevue Hospital; Clinical Lecturer on Diseases of Children, and Professor in Bellevue Hospital Medical College, N. Y.; an important reference to the Northwestern Dispensary, where he served for many years, is here unaccountably omitted. In the preface to one of the editions of this widely known work, a paragraph gives the key to the inspiration of all his purposes. It is to this effect: "Novel views have not, however, been presented, unless the author was fully satisfied that they were substantiated by a sufficient number of observations." His aim, so it seems, was ever to glean at first hand, without regard to emphasised opinions.

As professor of children's diseases at the Bellevue Hospital Medical College, he succeeded the late Dr. George T. Elliott, showy in person and attainments, but not quite so keen and subtle in diagnosis. But as Lamb once wrote, "The better the book, the less it demands from binding." Both will live in medical tradition, notwithstanding that the one was heard, the other read, inasmuch as the one inclined to the paper, the other to the encyclopaedia. There are yet survivors of those days of mental unrest, who hold that the symmetrical dot in Elliott had grown into the long deep line in Smith. There was during the lifetime of these two a deal of mutual banter with advantages confessedly on the side of Elliott, who was more the master of quotation, epigram, and paradox. Had either moved in other spheres of intellectuality, the one might have earned the honours of diplomacy, the other, those of statesmanship. Again, if medicine were war, Elliott would have been the dashing cavalry major, but Smith the steady infantryman with never a thought of straggling. Still the choice is open, for even history fails to present either opinions or judgments that are unassailable. As ever, there have been tacticians who have deemed their plans suitable for the use of conquerors, while professing to despise the diagrams of their humblest subordinates. Both acted well their parts, despite any and every stricture, so therefore let us dismiss at our utmost need with an "honourable mention."

It was not without much self-examination into his individual qualifications that Dr. Smith adopted the specialty of Pediatrics. He might justly claim an American pioneership in the career so marked out for himself, although the honour is divided through the

partiality of individual friendships among a few others. As he never was a stickler for his own particular rights, in all probability the distinction of priority for him may be forever lost. The more may be the pity, since the entire question hinges upon a few days in a date of publication. Withal he never cared to forswear his position as a general practitioner, for once when addressed by a very current designation with a somewhat offensive emphasis, he rather warmly replied, "Yes, perhaps a specialist, but I trust something more." This he said with the spirit of a veteran toward an unseasoned West Pointer. It cannot but be allowed that, without considerations of its magnitude, he kept up to the last the primitive habit of respect for attainments in other fields, although grievously burthened with the duties of his own division of labour. Let us regard him as a garnerer rather than a tourist—mayhap a plodder, but unquestionably not an excursionist.

Dr. Smith's modesty was in reality a provocation. There was a deprecativè plea of over-estimation which constantly jarred upon the judgments of his friends. The story goes that he once wondered at the cordial grip and uncouth ejaculation of a stranger at the Washington International Medical Congress, on loud announcement of his name. He could not understand why the tribute paid to him as an author was at the expense of the president of a nation, who was certainly within ear-shot. His confusion, that of one always unconscious of the passing glance, was much too embarrassing to be enjoyable, and if a hypocrite, his whole life must have been a drama of duplicity. There were never grateful acknowledgments from him for praises in such unseemly guise, although he might have dwelt upon the humor of the situation in the seclusion of the household. The incident might have only belonged to the complaint of "*Honest Voter versus His Excellency*," which has not yet been adjudged. Then, too, we might imagine Dr. Smith as commenting upon a possible snub intended for the chief executive, while he disavowed any complicity in the affair. As usual, his confessions were of mistakes rather than peccadilloes. In all sincerity we hope that our version is not a garbled presentment.

With an innate distaste for conventionalities, and the dreaded accusation of obsequiousness, he loyally clung to the poor, for among them, as he expressed it, "There were not many fanciful wants, and he could be implicitly obeyed, without the infliction of long talks." This little confidence to a friend was his only allusion to his own dainty taste for conciseness. Among these mild-

mannered invalids, often striving to escape the mischief of their vices, he showed the persistence of the unsalaried missionary, who required only the rough handling of the world as the readiest passport to sympathy. Of course he was admired in turn, for what the flotsam of a polyglot community called "his independence." There could not have been much deception anywhere, for payments were not rife, nor thanks overflowing. As may be well supposed, he loved Dickens, rather than Thackeray, and therefore was more at home in kitchens, where satisfying dinners were celebrations, than in the stage-set boudoirs of plutocrats, where modes and accommodations abounded. He thought anyhow, and certainly once remarked, that in the environments of the humbler folk, he could actually save time by keeping on his hat. As well also might it be said that he was glad of the opportunities for bestowals of advice without sacrifice of that much vaunted virtue—self-respect.

The following somewhat characteristic anecdote of Dr. Smith has come to our ears: During the "Draft Riots," a stalwart virago, red-faced and forgetful of her politics, fought away from his horse's bridle her masculine inferiors. Amid ungrammatical oaths and lusty blows, conjoined with the exclamation, "Why, this is my Dr. Smith," she possibly handed him on to posterity to make their obligations to him still greater, for at that time there were not a few conversions by extermination. He never identified his rescuer, but simply concluded that she must have been a patient who appeared much shorter abed. Aside from a by-play study of character, we know that to our friend, with his narrow escapes from the peltings of blessings, there came more surprise than fear. A bacteriological associate, many years later, explained the episode as attributable to the presence of an errant germ in unexpected environments. In his relations of the incident he confessed that a sense of the ludicrous kept up a little curiosity about the outcome, since he was in the heart of one of the most friendly neighbourhoods of his medical frontier, where desirable homes were admittedly few in number and where supervisors of finance were utterly unknown. Well, in this way he was beyond the reach of all laws, no matter what faction might be in power, and accordingly none cared to venture on an useless discipline. With a chuckle of consolation he had found without effort, a blossom in a waste run to weeds, and in a hot-bed, too, where there were many petty struggles after averages in sin.

Aside from society membership, the exactions of which there was ever a ready disposition to honour, Dr. Smith never hesitated to sacrifice convenience or comfort at any hour. His sleep was all the calmer after that dreaded "two-o'clock-in-the-morning" tinnabulation at the street door, when there was frost in the air and an echo in the foot-falls. He would never conceal his presence at home, especially on discovery of the family subterfuge, that the "Doctor was out on a long call," but would shout from his bedroom window to the fleeing applicant, that "He would soon be there." Thus how well could he escape the bleakness of his own greatness! What a lesson of total self-abnegation did he not then impart! Yes, this belated Puritan with the traditions of ancestral hardships and homespun virtues! In the garden of that soul, what rare exotics might have found also protection from the swirling blast! "Now," he would say, on his return, "I am entitled to a good sound sleep, for I need not worry over reproaches."

Once also, an apothecary, on a hasty order, found at midnight, Dr. Smith, on the top floor of a tall tenement, awaiting his arrival. He relates that he took a child with his own inimitable gentleness from the mother, who was alone too ill to rise from her bed, and himself administered the medicine, with the caution that no more was to be given until his arrival the next day. Bright and early in the morning he gave another dose, just as he had promised. The apothecary subsequently learned that the child, according to Dr. Smith's modest statement, "recovered" but "that considering the squalid surroundings he could scarcely expect a fee." He had a keen insight into character, knowing even the pauper's horror of debt, and assuredly no mortal ever paid greater regard to so praiseworthy a motive. His charity, never quite uniform in its repetitions, was credited, indeed, with being so decent that it gained a recognition as well in the circles of the wealthiest. Never against it was the innuendo of brazenness or glare.

From this, and many other corroborating anecdotes of his conceptions of duty, the inference may be drawn, that both hands and brains were incessantly occupied. Such most truly were the unarranged recreations which he substituted for vacations. Hasty meals at long intervals, even the half hours denied to him, but allowed to slaves, were, of course, among his experiences. Once he playfully remarked to a clerical guest, "What a pity that so much precious time must be wasted in eating." With what cries of indignation would he have driven himself from any refuge to which

he might have betaken himself, had he dared to inflict such hardships on others! But then, the multitude is privileged to read "long primer," in melodramatic tones, while the man of susceptible conscience is expected to use his leisure in grooming a book, while he nonchalantly surrenders his work without price.

Only shortly before his death he remarked to an intimate friend, that possibly some time or another, he might take a little relaxation in a European tour. The probability had a hollow sound to doubting ears. Should such an event, by some unexpected whirling of time, have happened, the trip would have had no other ending than a conversation or two with some worthy whose book he had long ago absorbed. His simple habits would have made him uneasy in any other society. Cathedrals and galleries would have been undoubtedly neglected for walks through some children's ward, and he would have been abandoned to his self-communings like some saint in the quiet practice of his virtues, or to his own usual deeds without suspicion of their glory. Perhaps, too, there would have been a tinge of gloom to his trip, that after all his pouring over treatises, there was to come a revolution to make antitoxin supreme and all his knowledge naught. That sorrow comes to us all, when we lay down our weapons and acknowledge a sovereignty. What must have been *his* griefs when he coned over his short onslaughts upon inevitable deaths, for to him the triumph came too late for utilisation. Gather not from this that bigotry is charged, far from it, for the spirit of candour possessed his soul. We merely recall his persistent convictions in varied phrase, his pathological lore, his prying into mysteries and dread of inconsiderate presumption. For him there were no dissimulations, even though he might pay the required obeisance before the opening glories of the future and flit onwards with arms crossed upon the bosom. Yet, nevertheless, he could not but think that Hippocrates was the grandest of clinicians and might not have written all he knew. He yet also rejoiced not unseemly that all of anatomy, most of physiology, and a little of therapeutics would survive the deluge of the ages.

From what has already been said the inference is easily drawn that the very spirit of honesty possessed him. This view is corroborated by his brother, Dr. Stephen, who says that it was a distinctive trait from boyhood that, "His cast of mind was judicial and of a rare truthfulness." All his other brethren know that even his industry was one long act of honesty. Therefore we have been prepared to hear of his deliberating hesitations and his bland dis-

missals of testimonial collectors with an "after further trial." This combination of traits likewise well explains his close reading of petitions before his signature among the "cheerful" endorsements. In these inopportune encounters his professional pride was ruffled if not his temper. On this ground he was certainly safe from blandishments.

Yet again, how there would come to us the pity that he was a degenerate, with the stigma of philanthropy, unmitigated and incurable! How conscious we were that his sly charity could not have been other than atavic and that it were best that it should run its course, even toward the wild delirium of a possible appreciation. With a specious flaw in his logic, he reasoned that because he well knew *himself*, there could be no deceits in humanity. So this guileless exemplar of the doctrine, that it is "more blessed to give than to receive," kept his heart aglow with the persuasion that his service was commended by every creed of morals, human or divine. Thus how adroitly on the part of some has he escaped the facile and unmeaning eulogy! Never mind, only the sacrifice was his, worst of all, ours *only the fee!* Let us dismiss this decorous giver with a gentle reproach merely, since his unscrupulous generosity often helped *us*, when confused with our over-much knowledge. Mayhap there may be a coronet from a throne somewhere for this frank, tolerant workman, who could speak so softly, tread so lightly, and close doors so noiselessly.

How often in his happiest moods would we come upon him, as he commented without asperity, wondering why enmities should arise out of opinions, and musing over the imperfections of laws, at the outset of their sojourn to justice! How we all deplored that we could not read his soul as well as his deeds, and pity those thoughts in the cloister, which should have had the freedom of an empire! Ah, how long before we shall forget this philosopher of erudition, and chariness of display; this librarian with books in unsuspected crypts; this reader, of stooped figure, with cadenced, sometimes inaudible voice, and kindly peering over low-poised glasses; this scholar of shuffling gait, who would so deftly steal away on tip-toe, with manuscript under arm; this gentle appraiser with a silent integrity, old-time loyalties of pronunciation, and child-like purloinings of time, by fluent talk about the latest discovery "across the water;" this author who could scribble so valiantly in cosy little corners; this humble votary of intense activities, who could so hurry away from the penance of the eye-servant to some work of supererogation, for the sake of a balance in the

ledger of such a life! Perish the thought, that *he* could have the capacity with never the wish for either compromise or sin! Shall we ever again look into the eyes of such a sifter of statistics, such a trimmer of the tales told by the scouts of science; such a clean, cautious sceptic, with such ever-wise conservatism?

Much of this life, so full of benefactions that fed the body without fretting the soul, was unstintedly given to the New York Foundling Hospital—long as a visiting physician—for it was here that he became the foster-father of the babe, which the obstetrician, and oftener the “midwife” foiled in her crime, had never seen. With these waifs, even down to the mellow twilight of his grand character, his knowledge virtually ripened—it needed not to grow—into wisdom, meekness, and a rare patience. The most lasting of his memories, with a kind of poetic recompense, were with this institution, from which he said that he would never resign save by duly authenticated official letter, and then he added, “The responsibility shall not rest upon *me*.” So almost his last conversations around the bedside were here, and the thought came here, too, that his life had almost reached the scriptural span, and the conviction as well that he ought not to expect his mission, above that of others, to be eternal. The allegory, alas, was turning towards the river, the doom of wandering was to be lifted, for all accusers were perjurers, and soon to the tireless toiler with trivial explanations of good deeds was to come the gentlest of summons. Now at the very last, when his frame began to totter intermittingly, and his mind to part with his memory, he dreamed of the comforts of some arm-chair and desk, where he might write sumptuously until he died. Scraps, notes, classifications, cases in clusters, definitions in pigeon holes, and stories in statistics, were found after death, all eloquent of plans and interruptions. “Fugitive pieces” they might have been called, were he a poet. Some were published, which might have been withheld by himself for revision, and yet nothing that was not valuable. How reconciled we are that not all were posthumous!

Let us be thankful, however, that even though his tendency to self-sacrifice was uneradicated, he could set before us fruits fit for the plucking of a lord, upon dishes of most dazzling glitter. Let us not begrudge this detective of the faintest morality, his holidays from the humdrum of his agreeable tasks, his cheated hopes and steady determinations, and whilom also those outings upon the Delectable Mountains of his self-constituted denials, to which the trudging Homer and the blind Milton might have been welcome,

but never the dwarfed Corsican, with blood on his hands and steel in his soul. For him carnage with glory had no charm.

In our dim, moist vision, there is aye for us to cherish, a pure, white sepulchre, around which may float sometimes the wail, but far oftener the cradle song of the mother. Have his flexible amenities yet spent their force? We protest not. The urn let us now leave, for there is a power in sight which moves with a pitiless speed, but which crushes into the sweetest repose. Rest then to that body, worn with its happy labour, for the moaning winds care not to disturb, and a greater calm to the spirit of that compressed life, unmastered by the indolence of age or the wane of a reputation—a life spent neither in senseless wassail, nor in the niggardly hoarding of coin,—much more a life without dismal solitudes but well rounded with wholesome mercies, and an unceasing giving of what it would scorn to ask. To us is but left the wisdom of the spectator, and the reflection, that it is “much easier to live up to one’s merit, than to one’s whole duty.” Stay, traveler, even the epitaph in the catacomb may still awake a chord amid the awe-inspiring peace of the centuries, with all their thankless legacies won by such sacrifices as these.

Dr. Ellsworth Eliot, when called upon by the president, Dr. Janvrin, remarked that J. Lewis Smith entered Yale university (then the college) at the close of the Freshman year, in 1846, and that therefore he must have enjoyed a longer acquaintance with him than any others present. He could not but remember this latest addition to their number. With a not unattractive personality, he appeared studious and intelligent, but had a somewhat undefinable rustic air. He was a little abstracted in manner and frail in health. He was also slender in figure, shy but earnest, self-contained, without much to attract him towards the secret fraternities of college life, he was never asked, nor did he care to join. He was glad, in fact, to escape these amities as minor drafts upon his time. On the whole, he may have esteemed himself much a gainer, inasmuch as he awakened no animosities and was glad of the privilege of being left alone.

Although joining our class at a disadvantage, that is to say, so near the beginning of the second year, he soon proved himself a good scholar, and it was not long before he gained the “*First Prize for the Solution of Mathematical Problems.*” We numbered ninety-four, some of whom, according to college usage, afterwards became distinguished. His standing at least was respectable, for

he began with a definite rank in the first quarter section of his class and ended his full term near the head of the list.

Our classmate was, a little later, associated in hospital work with the deceased Dr. Flint, of whose "Treatise on the Principles and Practice of Medicine" he spoke, on an occasion somewhat similar to this, in terms of praise, which might be justly attributed to his own work, now passing out of its eighth edition.

"No one," to quote Dr. Smith, "can read without recognising in it (Dr. Flint's treatise) an enduring basis, so that with the additions made to it, from time to time, of discoveries as they occur in medicine, it will probably continue to be one of the text-books consulted for information and guidance long after the present generation has passed away." The praise of the one might as readily be transferred to the other. Dr. Smith, it may be said in passing, was a great admirer of Dr. Flint's exactitude and perseverance in note-taking. In that particular he much resembled him, in allowing nothing to interfere with the habit.

Dr. Eliot had often heard of Dr. Smith's conveniences for revisions, which he carried with him in a grip-sack, particularly when on a railway journey. Surely indolence had no place among his vices, if he had any. "Both of these treatises, known to all," continued Dr. Eliot, "are beautifully monumental, and none can say more of the authors, in slightly changed phrase, than that 'none knew them but to praise.'"

Dr. S. B. W. McLeod, as a medical classmate of Dr. Eliot (for both received diplomas the year before Dr. Smith did his), could only add to the well-deserved eulogies of the occasion nothing but corroboration. He fully shared in the general opinion of the constancy of his self-sacrifices, to say nothing of the benefactions which are coming to the light, as should have occurred long ago. The stories of his good deeds by stealth cannot be imagined even by Dr. Shrady himself. His remarks, he claimed, were on the spur of the moment, and therefore could hardly be expected to do even scant justice to so pure and noble an ideal of genius and grace.—*From the Minutes of the New York County Medical Association, October 18, 1897.*

NOTE.—There is hardly, even yet, a complete bibliographical index of Dr. J. Lewis Smith's contributions, which, aside from those found in the TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION, are upon various topics, and scattered through the pages of the *New York Journal of Medicine*, the *American Medical Times*, the *Medical Record*, the *Archives of Pediatrics*, *Babyhood*, *Medical News* and *Obstet-*

rics, *Virginia Medical Monthly*, the *American Journal of Medical Sciences*, *American Journal of Obstetrics*, *Medical News*, *Proceedings of the New York Pathological Society*, *Journal of the American Medical Association*, articles for cyclopaedias, and unpublished papers read before the New York Academy of Medicine and other bodies. Only the day before his death, Dr. Smith was engaged in arranging material for an article bearing on "Influenza in Children."

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ARCHIVES OF PEDIATRICS.

The Hygienic Management of the Summer Diarrhoea of Infants, 1884. Enuresis in Children, 1884. Enuresis in Children, 1885. Contribution to the Knowledge of the Summer Diarrhoea of Children, 1886. Treat-

ment of Acute Infantile Bronchitis, 1886. A Case of Tumors of Cerebellum and Pons Varolii, 1888. Tetany, 1889. How to Prevent Complications and Sequelae in Scarlet Fever, 1891. How to Prevent Scarlet Fever, 1892. Scarlatinal Nephritis, 1892. The Two Forms of Diphtheria, Sometimes Designated True Diphtheria and Pseudo-Diphtheria; their Difference and Nature, 1892. Causes of Rachitis, 1893. A Case of Leukemia Occurring in the New York Foundling Asylum, 1893. The Aetiology of Tetanus Neonatorum, 1894. The Alimentation of Young Children, 1894. Tetanus of the New-born, 1895. Tuberculosis Originating in Intestinal Infection, 1896.

NEW YORK MEDICAL JOURNAL.

Aneurism of Arteria Innominata, 1865. On the Large Intestine of Infancy, 1870. Incontinence of Urine in Children, 1885. Enlarged Bronchial Glands, with Cheesy Degeneration, 1886. Sudden Heart Failure in Diphtheria; its Pathology and Treatment, 1889. The Question of Quantity in Infantile Feeding, 1890.

BABYHOOD.

The Causes of Rachitis, 1892. Hindrances to the Successful Treatment of Diseases of Infancy and Childhood, 1896.

CONTRIBUTIONS TO

Cyclopaedia of Practice of Medicine (Ziemssen); Ashhurst's International Encyclopaedia of Surgery; Starr's Diseases of Children; Keating's Cyclopaedia of Children's Diseases; Sarjous's Annual; American Journal of Medical Science; The Care and Treatment of Children and Their Diseases (five essays by Drs. Elizabeth Garrett Anderson, Sam C. Busey, A. Jacobi, J. Forsythe Meigs, and J. Lewis Smith); Pepper's System of Practice of Medicine; Wood's Household Medicine; Hare's System of Therapeutics.

MEDICAL NEWS AND OBSTET.

On the Summer Complaint of Infants; A Clinical Lecture, 1880. Tratamiento Hygienico de la Diarrea Estivae de los Ninos. An. de Obstr. Gineat y Pediat., Madrid, 1884. Aetiology of Diphtheria—Journal American Medical Association, 1891. The Toxic Effects of Expired Air—Journal Pathology and Bacteriol., Edinburgh and London, 1892-'93. Smith and Pembrey: The Histological Changes following upon Thyroidectomy in Animals—Proceedings Physiological Society, London, 1893. On Some Effects of Thyroidectomy in Animals—Journal Physiology, Cambridge, 1894.

VIRGINIA MEDICAL MONTHLY.

A Clinical Lecture on Varicella, 1879. A Clinical Lecture on Acute Articular Rheumatism and Endocarditis, 1880.

AMERICAN JOURNAL MEDICAL SCIENCES.

Treatment of Pertussis by Inhalation, 1879. Membranous Croup, Diphtheritic Croup, True Croup, 1885. On the Local Treatment of Pseudo-Membranous Croup—Intubation of the Larynx, 1886. The Times and Modes of Introduction of Exotic Diseases into America, 1894.

PROCEEDINGS NEW YORK PATHOLOGICAL SOCIETY.

Umbilical Phlegmon—Peritonitis, Acute Gastritis and Haemorrhagic Pneumonia, 1887. Umbilical Phlegmon, 1888-'89.

AMERICAN JOURNAL OBSTETRICS, NEW YORK.

Diphtheria—Clinical Lecture at Bellevue College, 1875. Constipation in Children, 1880. Pleuritis in Children, 1889. Thrombosis of Umbilical Vein, Acute Diffuse Peritonitis, 1884. Lead Poisoning, 1884.

MEDICAL NEWS.

On the Summer Complaints of Infants; a Clinical Lecture, 1880. Clinical Remarks on Scarlet Fever, 1882. Treatment of Acute Infantile Bronchitis, 1886. The Local Treatment of Diphtheria, 1887. Sudden Heart Failure in Diphtheria, Pathological Treatment, 1888. Sepsis of the New-born and Diphtheria of the New-born, 1888. Idiopathic Contractions, or Tetany in Infancy and Early Childhood, 1889. Treatment of Tuberculosis, 1889. Acute Naso-pharyngeal Inflammation, 1896. A Note on the New Method of Preparing Culture Medium—British Medical Journal, London, 1894. Some Causes of Infantile Mortality—Practitioner, London, 1884. The Prevention of Complications and Sequelae in Scarlet Fever, 1892. Myxoedema and the Thyroid Gland—Medical Magazine, London, 1893. Obstetrics, J., Great Britain—Depression of Thorax during Pertussis, 1877. Medical News, Philadelphia—On the Summer Complaint of Infants, 1880.

MEMOIRS.

By E. H. SQUIBB, M. D., of Kings County.

ALEXANDER BUCHANAN, M. D.

THOMAS HERRING BURCHARD, M. D.

EDWARD S. FARRINGTON, M. D.

GUIDO FURMAN, M. D.

JOHN HENRY FURMAN, M. D.

HENRY K. HUNTINGTON, M. D.

ERNST ILGEN, M. D.

CHARLES M. KITTREDGE, M. D.

LAWRENCE J. MCNAMARA, M. D.

GUSTAVUS A. SABINE, M. D.

DR. ALEXANDER BUCHANAN, an Original Fellow of the New York State Medical Association, was born in Glasgow, Scotland, in 1831. He came to New York in 1856, when quite young, and began to study medicine here. He, however, returned to Glasgow and graduated from the University of Glasgow in 1860. When he came back to this country he graduated from the New York Medical College in 1862, when he immediately opened an office at 358 West 30th street, New York City, and retained that locality until his death. It was believed that he contracted pulmonary tuberculosis from his patients, but he had been suffering for several years from a complication of diseases. He went to Sands Point, Long Island, early in the summer of 1896, to recuperate, but becoming worse he was taken to the Post Graduate Hospital in New York City, where he died on Wednesday, September 2, 1896. He was a Fellow of the Royal College of Physicians and Surgeons in Glasgow, a Fellow of the New York State and County Medical Associations, and a member of the New York County Medical Society. He was well known as a specialist in pulmonary diseases. He wrote frequently, both in the medical journals and scientific publications throughout this country and Europe, all treating more or less on pulmonary affections. His wife and three daughters survive him.

DR. THOMAS HERRING BURCHARD, an Original Fellow of the New York State Medical Association, was born in New York City, March 19th, 1850. His scholastic education was completed in the College of the City of New York in 1869, with honours. He almost immediately began the study of medicine with Dr. Lewis A. Sayre as his preceptor. He graduated from Bellevue Medical College in 1872. In that year the College of the City of New York, his Alma Mater, conferred upon him the degree of A. M. After receiving his medical degree he was house physician in Bellevue Hospital, and immediately after served as Demonstrator of Anatomy in Bellevue Hospital Medical College. He next was appointed attending surgeon at the New York Dispensary, and filled the position of Lecturer on Surgical Emergencies at Bellevue Hospital Medical College at the same time. This latter position he continued to fill at the time of his death. He was appointed one of the visiting surgeons to Charity Hospital, in 1880, and held the office of President of the Medical and Surgical Board of that Hospital for two years. At the time of the organization of the State Civil Service Commission he occupied the position of chairman of the Board of Examiners for hospital appointments. In 1894 he met with an accident which compelled his retirement from active practice for some time, during which he went abroad. On his return he took up his residence at 53 West 52d street, where he died very shortly afterwards, on Saturday, November 14th, 1896, of heart disease, and was buried in Greenwood cemetery. He was a prominent member of the American Medical Association, a Fellow of the New York Academy of Medicine, New York County Medical Association, and a member of the New York County Medical Society. He occupied a position of prominence both as physician and surgeon, and wrote frequently on medical topics. He was married twice, and the two children by his first wife survive him, as well as his second wife.

DR. EDWARD S. FARRINGTON was born in Brooklyn, in 1866, and received his early education in that city. He graduated from Yale College in 1888. He received his medical education in the College of Physicians and Surgeons in New York City, where he graduated with honour in 1892. He then served two years in the New York Hospital and Bellevue Hospital. He died at his last residence, 213 West 81st street, on Monday, September 7th, 1896, of typhoid fever. He was elected a Fellow of the New York State Medical

Association on October 8th, 1894, and was a member of the West End Medical Society.

DR. GUIDO FURMAN, an Original Fellow of the New York State Medical Association, was born in Nassau, Germany, on January 17th, 1831, and was the son of a Lutheran clergyman. He came to this country when sixteen years old, and studied medicine in the University of the City of New York, where he graduated in 1856. His whole professional life was passed in New York City. He was a member of the New York Academy of Medicine, New York County Medical Association, New York Pathological Society, and a Mason. He died of heart disease, at his residence, 254 West 84th street, on Wednesday, December 2d, 1896. His wife and two daughters survive him.

DR. JOHN HENRY FURMAN, an Original Fellow of the New York State Medical Association, was born at Clifton Park, N. Y., in 1833. He received his education in the State Normal School at Albany where he graduated in 1851. He followed this up with a literary course at Charlottesville, N. Y., and began the study of medicine in 1861 with Dr. John R. Conover of Freehold, N. J., as his preceptor. After the regular two years course he graduated from the College of Physicians and Surgeons in New York City. In 1864, he was commissioned as acting surgeon in the United States Army and was attending surgeon at the hospital at Little York, Pa., for two years. In 1874, he moved to Tarrytown, N. Y., becoming associated in a professional way with the late Dr. Horace Caruthers to whose practice he afterwards succeeded. He devoted most of his attention to obstetrics, in which he obtained a success which gave him a reputation throughout his section. In 1882, he married Mrs. Mary E., the widow of Latham C. Strong, the daughter of Dr. Harvey W. Fowler of Rensselaer county, N. Y. He was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association. He died on May 26, 1896, at the age of 64, and was buried in Oakwood Cemetery, Troy, N. Y.

DR. HENRY K. HUNTINGTON, an Original Fellow of the New York State Medical Association, was born in Hartford, Conn., on

March 27th, 1845. He was graduated from Trinity College, Hartford, in 1866, and afterwards from the College of Physicians and Surgeons, New York City. After serving on the House Staff of Charity Hospital, New York City, and later as resident physician and surgeon at the Convalescent Hospital on Hart's Island, he removed to New Rochelle, Westchester county, N. Y., where he resided for twenty years, building up a large practice, during which time he occupied the position not only of health officer but president of the board of education of that locality. He was well-known in his neighbourhood and surrounding towns. In 1896, he left New Rochelle and went to City Island to live. During the last year of his life his health was poor, and his life evidently was on the decline. He was found dead at the home of Mr. John Hawkins, on Banta Place, City Island, on Sunday, February 28th, 1897, after a sudden cardiac attack. He was in his fifty-second year. The funeral took place from Trinity Church, New Rochelle, at 10 a. m., Wednesday, March 3d, 1897. He had no children and his wife survives him.

DR. ERNST ILGEN, an Original Fellow of the New York State Medical Association, was born in Gmenstadt in Rhenish Bavaria, in 1814. He attended the Universities of Erlangen and Munich and received his diploma as a physician in Munich in 1836. After further study in the hospital at Würzburg he practised medicine in his native town and vicinity. At the University he was connected with the Burschenschaft, in Munich—a fraternity that aimed at the unification of Germany—and later he took part in the Revolution of 1849, which brought him under police surveillance. He emigrated to this country for political reasons in 1851, after his marriage in that year. He settled in New York City, where he established an active practice which continued until 1884. He then returned to Germany and remained there three years. When he reached this country again, he resided for two years longer in New York City, when he moved to 369 Herkimer Street, Brooklyn, where he died on March 4th, 1897, in his eighty-third year. At his special request, his body was cremated at Fresh Pond, N. Y. He was one of the oldest physicians in New York, and his professional life covered some sixty-one years. He achieved a high reputation as a physician, and especially as a specialist in diseases of children. He leaves a wife, three sons, and two daughters.

DR. CHARLES M. KITTREDGE, one of the Founders of the New York State Medical Association, was born in Mont Vernon, N. H., in 1838, where he spent most of the early part of his life. He obtained a liberal academic education. He served in the late Civil War in Company B, Thirteenth Regiment Volunteers of New Hampshire, enlisting on September 18th, 1862, as first sergeant, and on March 26th, 1863, was promoted to second lieutenant. After the war, he entered the Howard Medical College to study medicine, where he graduated in 1867. The early part of his professional career was spent in the Hartford Retreat, an institution for the treatment of nervous diseases. In 1870, he went to Fish-kill-on-Hudson where he established a Home for nervous cases. He took a great interest in his Home which comprised a beautiful estate and was known to be the most complete in that section, where he took a prominent part both professionally and as a public spirited citizen. His general practice there, however, was limited as his special attention was given to the cases treated in his Home. Several months before his death, he was in poor health, and his professional advisors considered his case quite serious as he was suffering from Bright's disease. He had a severe and dangerous attack in June, 1896. His wife died in 1893, and his children only were left to him. To recuperate, he took his children to spend the summer months in his native town in New Hampshire on June 23d, in hopes of gaining strength by that change. He, however, did not improve any in health although he did not become worse, but he died suddenly in Mont Vernon, N. H., of apoplexy, on August 19th, 1896.

DR. LAWRENCE J. McNAMARA, an Original Fellow of the New York State Medical Association, was born in 1860. He received his medical education in Bellevue Hospital Medical College, New York City, where he graduated in 1882. He served on the House Staff of St. Vincent's Hospital for the usual term of service. He early showed marked ability as a pathologist and bacteriologist, and when the Carnegie Laboratory in connection with the Bellevue Medical School was opened, he was appointed one of the instructors in that branch in that Institution. He began general practice in the Ninth Ward of the city, where he soon became well known and built up a large and profitable practice. He was a member of the New York Pathological Society and a visiting physician to the Hospital for Nervous Diseases. He was also a

member of the Ninth Ward Board of School Trustees before the trustees were abolished. He was a member of the New York County Medical Association. He died at his home, 126 Washington Place, West, on Thursday, January 28th, 1897. He leaves a wife and five children.

DR. GUSTAVUS A. SABINE, an Original Fellow of the New York State Medical Association, was born in Dorset, Dorsetshire, England, on June 27th, 1809. He entered the Middlesex Hospital in London, in 1828, and in 1832 received his degree from the Royal College of Surgeons. In 1833, he was appointed surgeon to the East India service. He came to this country in 1836, and the next year married a daughter of the late Captain Tufnell, an officer in the British army. The most of his professional life was spent in this country. During this time he occupied the position of curator of the New York Hospital, demonstrator of anatomy of the College of Physicians and Surgeons, consulting surgeon in the Quarantine Hospital and in the Woman's Hospital; was a member of the Pathological Society, the New York Academy of Medicine, the County Medical Society, and many charitable and religious societies. Although he adhered to a general practice, he made obstetrics a prominent part of his work. He was closely associated with the late Dr. Willard Parker, and it is reported that he was the first to suggest to Dr. Parker his ability of operating for perityphlitic abscess. He was the father of the late Dr. Thomas T. Sabine of New York City. He died of chronic cystitis at his home at 43 East 68th Street, on November 17th, 1896, in his eighty-eighth year. He was highly esteemed by every member of the medical profession, and while in active practice was an exceedingly busy but genial man.

REPORTS OF THE DISTRICT BRANCHES.

FIRST DISTRICT BRANCH.

The thirteenth annual meeting of the First District Branch of the New York State Medical Association was held at the Munson-Williams memorial hall, Utica, July 20, 1897.

The headquarters of the society were at Bagg's hotel, where a reception was held in the morning.

At 11 a. m. the meeting was called to order by President R. N. Cooley, M. D.

Bills for printing and hall rent of \$10.50 were on motion ordered paid.

All visiting physicians were upon motion invited to participate in all discussions.

The first paper of the day was read by Dr. Ayres, of Fort Plain; subject: "Empyema in Children." Discussion by Drs. Cooley, Garlock, and Hunt.

Dr. E. H. Douglas, of Little Falls, was elected secretary and treasurer.

The meeting was then adjourned until 1:30 p. m.

The president, Dr. R. N. Cooley, read a very valuable and interesting paper entitled, "Then and Now." Much interesting discussion was brought out by the president's address.

The next paper was by Dr. Robb, of Amsterdam; subject: "Faradism in Inertia of the Uterus." The paper was discussed by Drs. Garlock, Glidden, Hayes, Hunt, and others.

Dr. J. H. Glass read a very valuable paper with the title: "The Practical Application of the X-ray in Surgical Work." The doctor demonstrated with apparatus to the pleasure of all present, and he was tendered an unanimous vote of thanks.

Dr. Glidden, of Little Falls, then read a paper upon "The Infant Mortality and Management of Cases of Labour where the Presentation is Occiput Posterior." The paper was discussed by nearly all present.

Dr. R. N. Cooley, of Hannibal Centre, read a paper with the title: "An Unusual Case of Appendicitis." This paper provoked very general discussion, especially from Drs. Ferguson, Glass, Kilbourn, and Reid.

The final paper was read by Dr. E. D. Ferguson, of Troy; title: "An Unusual Experience in Diphtheritic Infection."

There were present: Drs. M. M. Bagg, Smith Baker, E. P. Clark, C. V. Doolittle, F. J. Douglas, E. H. Douglas, J. H. Glass, J. G. Hunt, J. G. Kilbourn, W. R. Marsden, C. Merrick, H. C. Palmer, D. H. Roberts, George Seymour, A. R. Simmons, C. B. Tefft, Utica; Douglas Ayres, Fort Plain; E. D. Ferguson, Troy; W. D. Garlock, C. H. Glidden, A. B. Santry, Little Falls; W. E. Hayes, G. N. Lehr, Frankfort; Clark Getman, Dolgeville; F. M. Miller, Deerfield; W. R. Reid, Rome; W. H. Robb, Amsterdam.

Meeting adjourned at 5 p. m., subject to call by president.

EDGAR H. DOUGLAS,

Secretary.

SECOND DISTRICT BRANCH.

The thirteenth annual meeting of the Second District Branch of the New York State Medical Association was held at Saratoga, June 25, 1897, in the United States Hotel.

Twenty-nine members registered. The meeting was called to order by the president, Dr. E. M. Lyon, of Plattsburgh.

An assessment of fifty cents was made to defray expenses of the Association.

The address of welcome was made by Dr. George T. Church, of Saratoga.

Three interesting papers were read by Dr. W. W. Seymour: (1) "Extirpation of Larynx and One Ring of Trachea, with Exhibition of Patient." Remarks upon the case were made by Drs. E. D. Ferguson and William Finder. (2) "A Case of Cancer of Tongue, with Exhibition of Patient Sixteen Months after Excision." (3) "Report of Hysterectomies for Fibroids." Discussed by Dr. Ferguson.

A paper on "An Unusual Experience in Diphtheritic Infection," was read by Dr. E. D. Ferguson.

Dr. W. H. Hodgman read a well-prepared paper on "Observations and Practical Suggestions on Warm Winter Climates, and Needs of Invalids."

A paper on "A Case of Traumatic Epilepsy" was read by Dr. D. C. Moriarta. Remarks were made by Drs. Finder, Ferguson, Hodgman, and Van Zandt.

"Elephantiasis of the Vulva, with Photographs," was the title of Dr. William Finder's paper.

All of the papers were very interesting and instructive to all present.

On motion of Dr. Ferguson, the secretary was elected to serve for another year.

The following were elected as the executive committee:

W. B. Sabin, M. D., Albany County.

E. M. Lyon, M. D., Clinton County.

C. E. Fritts, M. D., Columbia County.

F. J. D'Avignon, Essex County.

George Conkling, M. D., Green County.
F. J. Tompkins, M. D., Rensselaer County.
F. F. Gow, M. D., Saratoga County.
H. C. Van Zandt, M. D., Schenectady County.
H. F. Kingsley, M. D., Schoharie County.
I. J. Fitzgerald, M. D., Warren County.
John Lambert, M. D., Washington County.

A vote of thanks was extended to the Saratoga members for their hospitality.

The Association adjourned, to meet in Troy on the last Thursday in June, 1898.

After adjournment, the members of the Association dined at the United States Hotel.

JOSEPH E. BAYNES.

Secretary.

THE THIRD DISTRICT BRANCH.

The thirteenth annual meeting of the Third District Branch of New York State Medical Association was called to order at the Red Men's Hall, Norwich, N. Y., by the secretary, at 10 o'clock, June 8, 1897.

Dr. L. J. Brooks, of Norwich, was elected temporary chairman and served until the arrival of Dr. Aberdein, the president, at about 11 o'clock. Dr. S. M. Hand, of Norwich, was appointed to act as registry committee.

The minutes of the preceding meeting were read and approved.

A motion was carried that we extend our thanks to the Chenango Medical Society for their courtesy in inviting us to meet with them at the time of their regular meeting, and that we request the members of that society to take part in all the discussions of the Association. A motion was carried that papers be limited to fifteen minutes and discussion to five minutes.

Dr. H. O. Jewett's paper on "Medical Expert Testimony" was read by the secretary. He considered the evils arising from medical experts also acting as counsel, and from their giving such testimony as was desired by the party employing them. The paper was discussed by Dr. Brooks, who emphasised some points of the paper, and by Dr. Didama, who held that the expert himself was often to blame that he did not insist upon the right to give a full explanation to doubtful points in his own language.

Dr. J. J. Sweet presented an anatomical specimen in which the epiglottis was attached behind the glottis instead of in front.

The next paper was read by Dr. H. D. Didama, entitled, "A Few Remarkable Cures." He spoke of the importance of hygiene, then referred to cases occurring in his own practice, which were successfully treated only after mistaken diagnoses had been corrected. Ulceration of the stomach treated by small allowances of milk, obstinate constipation treated by large enemata, ichthyosis treated by stopping the morphine habit, were among the cases detailed. In reply to a question by Dr. Higgins, Dr. Didama explained how he had his patients with bronchiectasis empty the cavities by "coughing down hill!"

Dr. F. D. Reese read a paper on "Troubles Arising from

Phimosis, with Report of Cases." He showed how convulsions, change of temper, hernia, and pyaemia had been seen resulting from phimosis and cured by operating upon it. The paper was discussed by Drs. Totman and Higgins.

Dr. D. M. Totman, of Syracuse, read, by invitation, a paper on "Colles's Fracture," giving a fine account of the history of its pathology and treatment, which led up to the final correct description of it by Dr. E. M. Moore, of Rochester. He then demonstrated Dr. Moore's method of reduction and dressing for this fracture. The paper was discussed by Drs. Brooks and Didama, who were favourable to Moore's dressing, and by Dr. J. J. Sweet, who preferred two straight splints.

At 1 o'clock an adjournment of one hour was taken, when a bountiful collation was furnished in an adjoining room by the Chenango County Medical Society.

After the meeting was called to order, a vote of thanks was proposed by Dr. Ayres for the hospitality shown to the Association by the Chenango County Medical Society, which motion was unanimously carried.

Telegrams of regret were read from Dr. E. D. Ferguson, of Troy, and Dr. Chauncey P. Biggs, of Ithaca, and word was received from Dr. Ely Van de Warker and Dr. C. W. Ingraham, who were detained by ill health, and who were all expected to read papers at this meeting.

Vacancies in the executive committee were filled temporarily by the president. The report of the committee was adopted. Dr. F. W. Higgins was re-elected secretary; the same executive committee was re-elected. Syracuse was named as the next place of meeting.

A paper was then read by Dr. R. A. Thompson, of Norwich, on "Autointoxication." He recommended the free use of water to flush the system by the kidneys and the bowels. He thought that many neuroses were due to autointoxication. He recommended freeing the nasal passages when necessary in order to give freer supply of oxygen to burn up the waste. He recommended a careful examination for constipation, and its thorough treatment. Dr. W. E. Ford, of Utica, discussed the paper, highly recommending it to the attention of the members. He spoke of the importance of estimating the total solids excreted by the urine, and pleaded for more accurate clinical work.

Dr. J. G. Orton offered the following resolutions upon the fact that one of our original members had attained to fifty years of the active practice of his profession:

WHEREAS, It has come to the knowledge of some of the Fellows of this Association, that our esteemed associate, Dr. H. D. Didama, has already reached the semi-centennial of his entrance upon the practice of his chosen profession; therefore, we desire to place on record our high appreciation of his eminent success as a practitioner, as a medical teacher, and as a gentleman. He has ever adorned and magnified his calling. Upon him have been worthily bestowed many of the highest honours in the gift of our profession, both state and national; and we count ourselves as happy and as doubly honoured in the fact that he is one of our number. We desire especially to congratulate Dr. Didama at this time, and cordially to extend to him our earnest and best wishes for his health, long life, and happiness.

Dr. Brooks offered a resolution upon the long life of Dr. Dwight, of Preston, and a eulogy upon his character as a physician and a man. Dr. Totman followed, and spoke feelingly of what he and the profession generally owed to both these men.

Dr. Aberdein, the president, read his address upon the subject, "Uterine Cancer," detailing several interesting cases, together with the surgical treatment.

Dr. F. W. Higgins opened the discussion upon cancer by a paper upon the "Pathology of Cancer." He considered that it was not an inflammation or the result of bacterial infection, but rather the increase of epithelial cells, congenitally predisposed to abnormal, self-centered growth.

Dr. W. E. Ford, of Utica, continued the subject, pleading for a more thorough study of cancer under the auspices of the state; also for early operation upon uterine cancer. When a case is inoperable, the foul tissue should be largely removed by the curette, and a few days later by the galvano-cautery loop. Early diagnosis by the microscope is desirable.

Dr. L. J. Brooks continued the subject by a paper upon the surgery of cancer, limiting himself especially to the cancer of the breast. Early operation, complete removal, removal of the lymphatics, and tying off the feeding vessels in inoperable cases, were among the points of the very excellent paper.

Dr. J. W. E. Winnie, of Sydney, and J. W. Sheffield, of Sydney, became members of the society.

The meeting adjourned at 4:20 p. m.

R. ABERDEIN, *President*.

F. W. HIGGINS, *Secretary*.

FOURTH DISTRICT BRANCH.

The thirteenth annual meeting was held at the Genesee Valley Club, Rochester, May 11th, 1897.

The meeting was called to order at 11 o'clock a. m. by President Hubbell.

The annual report of the treasurer was presented and approved.

A motion was made by Dr. M. W. Townsend that Drs. Colvin, Menzie, and Ellenwood be appointed a committee to draw up resolutions for presentation to the Branch in regard to legislation in reference to representation upon the State Board of Medical Examiners. After extended discussion by Drs. Colvin, Ellenwood, Stone, Lusk, S. S. Green, and Hubbell, it was voted that the officers of the Branch express to Dr. Ferguson that the Branch approves of all he has done in the matter.

That we, as a Branch, propose to assist him in the future in every way possible.

It was moved by Dr. Stone that this Branch oppose any legislation in regard to optometry; that a committee be appointed to draft a resolution and send it to all members of the legislature in the Fourth District, provided the bill comes up next fall.

Upon motion of Dr. Lusk, it was voted that a special committee be appointed, two members to be from Buffalo, two from Rochester, and three from outside of these cities, to constitute a committee on programme for the Buffalo meeting, and to solicit membership.

The president appointed as such committee Drs. Rochester and S. S. Green, from Buffalo; Drs. E. M. Moore, Jr., and Goler, from Rochester; Dr. Lusk, Warsaw; Dr. Bemus, Jamestown; Dr. Parkhill, Hornellsville.

The annual address of the president was delivered by Dr. Alvin A. Hubbell.

Dr. Z. J. Lusk, of Warsaw, presented a paper upon "Alcohol as a Medicine."

The paper was discussed by Drs. E. M. Moore, Ellenwood, and E. M. Moore, Jr.

Dr. G. W. Goler, of Rochester, presented a paper on "Conservative Surgery of the Uterine Appendages."

Dr. S. S. Green presented a report of several interesting cases.

Prof. E. M. Moore exhibited some unique and exceedingly interesting pathological specimens and gave the history of several of them.

The following executive committee was elected for the ensuing year:

- B. C. Wakely, M. D., Allegany County.
- S. J. Mudge, M. D., Cattaraugus County.
- Wm. M. Bemus, M. D., Chautauqua County.
- C. C. Wyckoff, M. D., Erie County.
- M. W. Townsend, M. D., Genesee County.
- F. H. Moyer, M. D., Livingston County.
- E. M. Moore, Jr., M. D., Monroe County.
- G. P. Eddy, M. D., Niagara County.
- F. R. Bently, M. D., Ontario County.
- John H. Taylor, M. D., Orleans County.
- C. S. Parkhill, M. D., Steuben County.
- Darwin Colvin, M. D., Wayne County.
- Z. J. Lusk, M. D., Wyoming County.
- William Oliver, M. D., Yates County.

FIFTH DISTRICT BRANCH.

The thirteenth annual meeting of the Branch was held at 315 Washington street, Brooklyn, on Tuesday, May 25, 1897.

The morning session was called to order by the president, Dr. Charles Phelps, at 11:45 a. m.

The secretary read the minutes of the last meeting, which were approved as read.

The report of the committee of arrangements was read and accepted:

REPORT OF THE COMMITTEE OF ARRANGEMENTS FOR THE ANNUAL MEETING, 1897.

Your committee beg leave to report that they have thought best to still continue the apparent satisfactory arrangements in relation to securing the meeting rooms and catering which have existed for a number of years past. They, however, regret to report that the attempted inauguration of a plan to place our scientific material, together with the discussions, on record in one medical journal did not at the last turn out as satisfactory as hoped for, chiefly for the reason that the editorial privileges of such publications give the opportunity to either alter, or entirely refuse to print, any article which does not meet the ideas of their publication. Thus it is our last year's work is not on complete record in any one publication. It is, therefore, necessary to fall back upon the plan previously carried out, of simply allowing each writer to choose his own medical journal for publication, after notifying the executive committee for approval.

Respectfully submitted:

J. D. RUSHMORE, M. D.

T. M. LLOYD, M. D.

N. W. LEIGHTON, M. D.

WILLIAM McCOLLOM, M. D.

R. M. WYCKOFF, M. D.

The secretary here announced that the president had appointed Drs. M. C. Conner and N. W. Leighton to act with the secretary as registration committee.

The president's address was next in order, but it was moved and carried that it be postponed until later, when more Fellows would be present.

The annual report of the executive committee was then read and adopted:

Your committee have accomplished all the necessary minor business by mail throughout the year, up to the annual meeting, which was held this morning.

There is little special business to report, as the matters receiving attention have all been of a routine character.

The finances of the branch continue in the same satisfactory condition as last year, as shown by the treasurer's statement. The receipts for the year were: From assessments, \$33.00; by interest, \$76.73; making a total income of \$109.73. The general expenses were \$106.40. The increase in the permanent fund, during the year, was \$65.00, making a total now in the fund drawing interest, of \$1,390.00.

In view of the present steady increase of the permanent fund, a future period was looked forward to, when the fund would completely take care of the Branch expenses. It was, therefore, urged that renewed effort be made to more rapidly increase the contributions. The purpose of the fund, and the advantage to the contributor, should be explained more fully, and the way made easy for more of the Fellows to join in its benefits. The treasurer was directed to continue the assessment of \$1.00, for the coming year, on all those Fellows who have not joined the permanent fund.

The treasurer's accounts have been duly audited and approved.

Your committee have decided upon the fourth Tuesday in May, 1898, for the next Branch annual meeting, in compliance with the by-laws.

A cordial welcome, and full privileges of the floor, are recommended to the delegates present at the meeting.

The treasurer's annual statement was then read. No action was called for, as it had already been audited.

The secretary, as the committee on necrology, reported that there had been ten deaths among the Fellows of this district during the past year—one a Founder, Dr. C. M. Kittredge.

The statistical report of each of the late Fellows was next read, and on motion the whole were referred to the committee on necrology, of the state association, for use in the next Transactions.

The secretary announced that he had received, in behalf of this Branch, a programme of the thirteenth annual meeting of the

Third District Branch, to be held in Norwich, N. Y., on June 8, next.

Choosing the nominating committee was then in order. The secretary called off the counties of the district, and the Fellows present selected the following committee:

Dutchess County,	Dr. I. D. LeRoy.
Kings County,	N. W. Leighton.
New York County,	J. G. Truax.
Orange County,	M. C. Connor.
Putnam County,	(None present.)
Queens County,	"
Richmond County,	"
Rockland County,	"
Suffolk County,	"
Sullivan County,	"
Ulster County,	"
Westchester County,	"

This committee was reminded that it was expected to meet during the coming intermission, in order to make its report at the afternoon session.

As the president was about to read his address, it was moved and carried that it be still further postponed until the opening of the afternoon session.

There were no reports of cases, or volunteer papers.

Adjourned for lunch at 12:15 p. m.

The afternoon session was called to order by the president at 2 p. m.

The president's address was read.

In order to permit a discussion on any of the points in the address which had a surgical bearing, the president asked the secretary to take the chair. There was no discussion, but a motion was made by Dr. William McCollom, duly seconded and unanimously carried, that, as the president had not proposed to publish his remarks, he be requested to surrender them to the Branch, and the secretary be directed to forward them to the state association, with the special request that they be printed in the next Transactions, as many valuable points were brought out which undoubtedly deserve permanent recording.

PRESIDENT'S ADDRESS.

The great achievements in medicine and surgery, which have in recent years finally crowned persistent labour in the laboratory, at the bedside, and in the dead-house, still dominate the professional mind. The brilliantly successful results of operation upon the great cavities of the body, which have become possible in cases which even in our own time have been absolutely and hopelessly fatal, have naturally absorbed attention to the exclusion of the treatment of those commoner maladies which afflict, if they do not destroy, the lives of men. It is small wonder that gastro-enterostomies, enterectomies, hysterectomies, and nephrectomies, which are even yet comparatively new procedures, have left us but a languid interest in the cure of haemorrhoids, reducible hernias, bunions, and varicosities of the veins.

It is scarcely more than a century ago that Manfertius, himself a layman, placed the possible removal of the kidney or the uterus among the things to be hoped for in the future, and held that they should be experimentally attempted upon condemned criminals. This "possibility of impossibilities," as it was termed by a scribbling satirist of the day, has been more than realised in that "progress of science" of which he dreamed, though the vivisection of criminals has not been among the resources of the pathologist. If nephrectomy is not yet a frequent resort, hysterectomy is oftener done than amputation of the extremities, and intestinal resections, of which it did not enter into the mind even of Manfertius to conceive, is far from unusual. The excision of the appendix caeci seems to have been found desirable in a surprisingly large number of people; the existence of a catarrhal inflammation, and the remembrance of a stomach ache at some previous time, establishes the diagnosis of recurrent appendicitis, and the unfortunate appendix is condemned by a sort of drum-head court martial, and excised before it has a chance to escape by even a speedy resolution of the pathic process. The threatened or actual formation of pus, when the resort to operation is no longer questionable, however, affords to the general practitioner a positive and frequent indication for laparotomy.

It is especially these major intestinal operations which have so fascinated the general profession; and as certain of them are often operations of emergency, and occur as probably in remote districts as elsewhere, the physician often finds himself occupying the place of the operative surgeon, and compelled to accept the

responsibility for action or inaction when decision is most delicately poised and interference is most difficult. The interest which attaches to the highest plane of operative surgery is thus intensified and diffused by the possibly personal concern which every individual practitioner realises may be his at any unexpected moment. It has unfortunately led at times to the resort to serious operative interferences, especially in the field of gynaecology, by inexperienced operators when the plea of urgency was scarcely admissible. It is more than doubtful whether two months' instruction in some one of the multitudinous post-graduate schools, and a theoretical knowledge of aseptic methods, is sufficient preparation to justify resort to procedures which require technical skill, unless necessity leaves no choice.

It may be well on occasion to withdraw our gaze from the refulgent zenith, and to fix it upon the earth which we daily tread. The demand for laparotomy, or for the removal of cerebral tumor, is not frequent. There are surgical maladies in which life is not usually at stake, which are not intolerable, but which add much to the sum of human misery or physical incapacity, and with which familiarity has too often bred neglect.

Such a morbid condition—the varicosity of the crural veins—I make my subject in preference to another, because it has fallen much in my way, and because it is more amenable to treatment than is usually supposed. Congenital imperfection, as a remote cause, and the influence of gestation in women and of occupation in men have conspired to make it the most frequent in occurrence of all the minor surgical diseases. In the physical inspection of large numbers of young men in the course of civil service examinations, which affords extensive opportunities for observation, its frequency even in such subjects, in whom liability is held to be least, is remarkable. They are so often encountered in ordinary practice as to be generally regarded as unimportant, and are so little benefited by ordinary methods of operation, or by palliative treatment, that they are usually relegated to the class of ailments which are to be passed over as easily as possible, or simply enumerated among the ills to be endured rather than to be cured. Their prevalence among elderly people and multifarious women, whose manifold disorders are so readily ascribed to irremediable conditions, has still farther detracted from a disposition to give them serious consideration. The advisement of an elastic stocking ordinarily satisfies the sense of professional responsibility.

This condition is, in fact, neither unimportant nor beyond the

pale of radical cure. It may even endanger or destroy the life of the patient; rupture of a varix has occasioned sometimes fatal, and often dangerous, hæmorrhage. Enormously distended veins, or it may be chronic ulcer or eczema from circulatory disturbance, seriously impair physical capacity; and moderate venous enlargements, otherwise harmless, will utterly incapacitate the subject for any pursuit in life, as the naval, military, police, or fire service, for which he must pass a preliminary physical examination. The inefficiency of means which have been employed for the cure of such cases seems attributable rather to a lack of appreciation of the immediate end to be accomplished than to any inherent difficulty in its attainment.

Five years ago and more, I described a method of operation which I believe to embody the principle essential to radical cure, and which has been made practicable by the introduction of aseptic forms of procedure. The operations most practised at that time, and still in favour, consisted in excision of a portion of the vein, or in the application of a very limited number of ligatures at considerable distances from each other. Such measures were sure to fail in just the cases in which interference was most likely to be demanded.

It is obvious that when the internal saphena is swollen from the foot to the saphenous opening, and the whole leg is covered with a net-work of enormously distended and tortuous venous streams, tributary both to it and to the external saphena, that interruption at one or even several points must be insufficient to force the whole mass of blood into the deeper vessels. A single conglomeration of varices may be successfully treated by excision, or it may happen that a somewhat extended line of varicosities occurring in a single vein can be effaced by ligation at distant intervals. If a vein were a simple tube, closed from end to end, it might be obliterated by a single obstruction made at its proximal extremity, but even then there must be as many sites of operation as there are veins involved. In fact, each vein of magnitude receives an indeterminate number of others, and its varicosities can be solidified with certainty only by such multiplication of points of obstruction as will ensure the termination of each tributary in an individual *cul de sac*. The complete obstruction by clots of each and every varicose vein throughout its whole extent is the principle upon which any successful operation must be based. The manner in which it is effected is of importance only as it concerns practicability and safety. In this view I have resorted to

multiple subcutaneous ligation, which is perhaps practicably the only way in which the indication can be fully met. To attempt the consolidation of so many veins at so many points as I have found requisite, would by any other means necessitate a formidable operation.

The essential principle involved has been sometimes overlooked by surgeons who have thought they were following the procedure which I have suggested. I have seen a number of cases in which many subcutaneous ligatures had been applied, but in which the result was imperfect, because, notwithstanding the number of ligations, the veins had still failed of methodical occlusion. I have been assured that subcutaneous ligation is not a novel method of treatment, which is doubtless true, but the entire occlusion of every vein involved throughout its whole extent has not, so far as I know, been previously advocated, and it is the principle and not the method of its application upon which I insist, and which constitutes the essence of the operation.

The operation, as I have done it, where the varicosities are many, requires great patience and the expenditure of much time. In many instances, I have occupied from one to two hours in its performance, working with the rapidity which comes from habitude, and with the aid of two assistants, and even of a third who may be engaged in the ligation of the vessels of the opposite extremity.

In very simple cases, in which not more than twenty or twenty-five ligations are required, and when the patient is possessed of some fortitude, it is possible to dispense with an anaesthetic, but ordinarily, while the application of a single ligature is not attended by any great degree of pain, the aggregate amount of suffering entailed by their multiplication becomes insupportable without anaesthetic relief.

As in all other operations, aseptic methods and precautions in preparing the limb, in operating, and in dressing, should be scrupulously observed. Veins, even of considerable size, are lost to sight in the recumbent position. It is, therefore, necessary to mark in advance the points at which the ligatures are to be applied. This will prevent irrigation of the limb during the progress of the operation, as ordinary colouring matters are washed away. I have found the tincture of iodine most convenient for the purpose. It is well to first ligate in the most dependent parts to avoid effacement of these guides by haemorrhage coming from points above.

The distance between the ligatures should vary in accordance with the size and varicosity of the vein, and the number of its apparent or probable anastomoses. In long stretches of large but comparatively straight vessels the intervals may be from one and one half to two inches, but as a rule they should not exceed one inch.

In masses of dilated and convoluted veins, forming a vascular tumor, the ligatures should be first applied to every immergent and emergent trunk which can be distinguished, and afterward carried over the entire mass if its size will permit. I have sometimes been compelled to defer the final ligatures to a secondary operation. I usually employ catgut threads of the size denominated "Violin E"; the smaller veins may be better tied with a smaller gut, and the largest as well as the vascular tumors with the coarser varieties at dissection.

The needle most convenient for use is straight, flattened, sufficiently broadened toward the point to enclose an eye for the ligature, and provided with a handle like that of the instrument for suture of the abdominal walls. The ligature is to be carried immediately behind the vein, and through the skin upon the opposite side, and the needle unthreaded and withdrawn, leaving the ligature *in situ*. The needle is then to be passed in front of the vein, through the openings which it has previously made, and the end of the ligature caught and brought back. The vein having thus been included subcutaneously, the ligature is to be tightly tied, cut short, and the knot left in the wound. If the gut is small, the knot may slip beneath the skin; this is probably unimportant, though I prefer that it should remain upon the surface.

It may happen that a large tributary vein, passing vertically inward to an intermuscular space, may leave a globular varix in the interval between two ligatures, which will require subsequent ligation. This may be effected by carrying the ligature deeply along one side of the anastomotic vein, re-entering the point of exit, and conveying the ligature at right angles to a second point of exit, and, by a continuance of this method, surrounding the vein; and finally bringing out the end of the ligature at its original point of entrance.

The number of ligatures demanded, is matter of absolute indifference. They should be counted only when the operation has been completed by the occlusion, through its whole extent, of every vein large enough for isolation; there is no other limit to ligation, and the patient will recover with equal rapidity, whether

there have been few points of ligature or many. If, through fear of unduly multiplying ligatures, veins of moderate size, not yet varicose, are neglected, they are liable to a subsequent enlargement, which may be more or less compensatory in character. In this way, some of my earlier cases were less completely satisfactory than are those of more recent date. I have, very frequently, used from seventy-five to one hundred ligatures, and in one instance, one hundred and ninety-eight, in the two extremities.

After the application of aseptic dressings, each limb should be confined upon a posterior splint, and the patient kept in bed for two weeks. In the event of suppuration, convalescence will be prolonged, and this accident may occur, though asepsis has been, apparently, perfect. The fault seems to exist in a septic quality of the catgut. No harm results, beyond the longer detention of the patient in bed, and the trouble involved in more frequent changes of dressing.

I have described the technique of operation with some minuteness of detail, because it is not generally well known. I must be pardoned, if I speak in the first person, since I refer only to the results of my own experience.

This method of treatment is devoid of danger. The haemorrhage, sometimes profuse, which may occur from the wounding of a vein, is always readily controlled by the application of another ligature upon the distal side of the bleeding point. I have seen no instance of the detachment of a clot, or of septic phlebitis, and recognise no special liability to their occurrence in this, over other means of producing occlusion. If ligature be previously applied at the proximal extremity of the internal, and of the external saphenae, their multiplication, to any extent, at points below, will not increase the probability of danger, from either complication.

The absolute protection from septic phlebitis, as well as from subcutaneous suppuration, is to be had in the aseptic care with which it is possible to conduct any operation, when time can be given to preparation. The catgut, which is preferable to silk for buried sutures or ligatures, can be obtained, of a quality above suspicion, as can gauze or other dressings, which the surgeon may not choose to prepare for himself. In forty cases which have been treated in this manner, in my service in Bellevue hospital during the winter just passed, involving over two thousand ligatures, there have been, as I am informed by the house surgeon, not more than three or four drops of pus altogether. If any sup-

purating points should be discovered, they can be controlled with little difficulty by injecting each one with the solution of the hydrogen peroxide. If suppuration is suspected, the first dressing should be made on the second or third day, that early measures may be taken for its control. A temperature of $101^{\circ}+$, or even higher, however, may be attained without the existence of a pyogenic process.

The only accident which I have encountered, in this operation, was a single instance of paralysis from probable inclusion of a nerve in the popliteal space. Function was gradually restored, after the solution of the catgut. There is no possibility, with ordinary care, of implication of a nerve of any considerable size, and, in any event, loss of power must be transitory, since the amount of compression can be neither sufficiently severe, nor prolonged, to cause permanent impairment of structure. The immediate readjustment of the return circulation, even when all the superficial veins have been enormously enlarged, has always been effected without difficulty. In some cases, in which extensive ligation has been necessary, a weakness of the limb has persisted for a considerable time, but normal strength has been eventually regained, without special treatment. The limb should be supported by a roller bandage, or an elastic stocking, for two months, or until the obstructing coagula have become firmly solidified.

There are comparatively few cases in which operation is inadvisable, or improper. There are constitutional conditions, as of pregnancy, or of organic disease in which operative interference, for any purpose, would be contraindicated; and there are also instances in which the condition depends upon obstruction within the pelvic or abdominal cavity, in which it would be manifestly unwise; but ordinary derangements of health, or even somewhat advanced age, have not militated against success.

The cure is complete, in proportion to the completeness of operation. I have now operated in at least three hundred cases, and I recall but few instances in which I have had occasion to be dissatisfied with the result. It may happen, especially when the veins to be treated are numerous, and many of them not of great size, that some necessary points for ligation may be overlooked; or that an agglomeration of varices which has formed a considerable tumor may fail of complete obliteration. A secondary operation may then be required, but a comparatively small number of ligatures will suffice. The excess of blood, which has burdened

the superficial vessels, and has been surgically forced through the intermuscular spaces into those of the deeper tissues, will continue to be returned through them, rather than to develop new channels upon the surface.

It cannot be too often reiterated that the important point in this treatment of crural varices, the essential principle upon which it depends, is not in the use of the ligature, or in the subcutaneous method of its application, but in the complete obliteration, throughout its whole extent, of every vein affected. The ligature was long since used for this purpose, and subcutaneously employed in other regions of the body. The subcutaneous ligature is resorted to, here, simply as the most convenient and effective means of fulfilling an indication.

Dr. L. A. W. Alleman next read his paper on "Treatment of Convergent Strabismus in Children." (Published in "The Medical News," Vol. LXXI, page 326). Discussed by Dr. F. S. Milbury.

Dr. G. W. Murdock then read "A Suggestion in the Treatment of Diabetes." (Published in "New York Medical Record.")

Discussed by Drs. J. G. Truax, J. W. S. Gouley, and J. D. Sullivan.

Dr. T. J. McGillicuddy next read his paper on "Medical Asepsis. A Preliminary Note."

No discussion.

As the President was obliged to leave, he called Dr. William McCollom to the chair.

Dr. T. J. Hillis's paper on "The Physician, his Personnel, and How it Affects his Success," was then read. (Published in "New York Medical Record," Vol. LII, page 224).

Discussed by Drs. Truax, Gouley, McCollom, Sullivan, and the author.

Dr. F. H. Wiggin's paper was next in order. He stated he had thought best to alter the title to "Notes on the Operative Treatment of Complete Vaginal and Uterine Prolapse, With a Report of Two Cases." (Published in "The Medical News," Vol. LXXI, page 333—).

Discussed by Drs. Truax, Gouley, and the author.

The report of the nominating committee was then read, accepted, and approved, and the committee discharged.

As the Executive Committee for 1897-'98, to represent—

Dutchess County,
Kings County,

Dr. Wm. Cramer.
Dr. Wm. McCollom.

New York County,	Dr. A. D. Ruggles.
Orange County,	Dr. M. C. Conner.
Putnam County,	Dr. G. W. Murdock.
Queens County,	Dr. E. G. Rave.
Richmond County,	Dr. H. C. Johnston.
Rockland County,	(Vacated by death).
Suffolk County,	Dr. W. A. Hulse.
Sullivan County,	Dr. C. W. Piper.
Ulster County,	Dr. H. VanHoevenberg.
Westchester County,	Dr. H. E. Schmid.

The chairman then called for a meeting of this new committee for immediately after adjournment to elect a Secretary for the ensuing year.

Adjourned at 5 p. m.

The register showed thirty-two Fellows and seven Delegates present.

E. H. SQUIBB, *Secretary.*

EXECUTIVE COMMITTEE.

A called meeting of the Executive Committee was held at 315 Washington street, Brooklyn, on Tuesday, May 25, 1897. The meeting was called to order by the President, Dr. Charles Phelps, at 10:45 a. m.

Present :
 Dr. Charles Phelps.
 Dr. J. C. Bierwirth.
 Dr. M. C. Conner.
 Dr. A. D. Ruggles.
 Dr. E. H. Squibb.

The Secretary read the minutes of the last meeting which were approved as read.

The report of the Committee of Arrangements which had been elected by circular vote was read and accepted.

The President next appointed Drs. Conner and Leighton to act with the Secretary as registration committee.

The Secretary then read the official report of the deaths in this district for the past year :

Dr. C. M. Kittredge of Dutchess county, a Founder.

Dr. J. H. Furman of Westchester county, an Original Fellow.

Dr. H. K. Huntington of Westchester county, an Original Fellow.
 Dr. Ernst Ilgen of Kings county, an Original Fellow.
 Dr. Alex. Buchanan of New York county, an Original Fellow.
 Dr. T. H. Burchard of New York county, an Original Fellow.
 Dr. G. A. Sabine of New York county, an Original Fellow.
 Dr. Guido Furman of New York county, an Original Fellow.
 Dr. L. J. McNamara of New York county, an Original Fellow.
 Dr. E. S. Farrington of New York county, elected a Fellow
 Oct. 8, 1894.

The Treasurer here read his itemized accounts and submitted the following annual statement:

TREASURER'S ANNUAL STATEMENT MAY 26, 1896, TO MAY 25,
 1897.

*Fifth District Branch New York State Medical Association
 with E. H. Squibb, Treasurer.*

DR.

To balance cash as per statement May 26, 1896	\$202.66
Assessments collected	33.00
Interest	76.73
	<hr/> \$312.39

CR.

By rent of meeting rooms for 12th annual meeting	\$ 10.00
Catering for 12th annual meeting	50.00
Postage	15.00
Printing	3.75
Stationery, etc.	3.65
Stenographic work	24.00
Balance on hand	205.99
	<hr/> \$312.39

PERMANENT FUND ACCOUNT.

DR.

To total amount of fund as per statement May 26, 1896	\$1,325.00
Contribution to fund to date	65.00
	<hr/> \$1,390.00

CR.

By investment in railroad bond (5 per cent. int.)	\$830.00
Balance on hand at interest	560.00
	<hr/> \$1,390.00

The President appointed Dr. Ruggles to audit the accounts, and the cash book and vouchers were surrendered to him.

It was next decided to hold the next meeting of the Branch in Brooklyn on the fourth Tuesday in May, 1898, in compliance with the by-laws.

The following gentlemen were expected to be present at the meeting as delegates from the Kings County Medical Association :

Dr. H. A. Alderton,	Dr. H. H. Morton.
Dr. H. Arrowsmith,	Dr. B. B. Mosher.
Dr. L. Grant Baldwin,	Dr. H. C. Riggs.
Dr. A. C. Brush,	Dr. F. W. Shaw.
Dr. E. S. Hodgskin,	Dr. J. E. Sheppard.
Dr. Henry M. Smith.	

The general condition of the finances and the assessment for the ensuing year were next taken up. It was finally decided to continue \$1.00 as the assessment on all those Fellows who have not joined the Permanent Fund.

The following report was read of the committee appointed at the last meeting to facilitate the election of Branch Secretary, and placed on file :

The President and Secretary have duly considered the plan of electing a Secretary by circular vote when such is not accomplished by the provision of the by-laws, as suggested in the resolution passed last meeting, and find that it would not necessarily make the working of the details of the Branch any smoother as supposed by the adoption of such a plan. Therefore they herewith very respectfully oppose the proposition.

J. R. VANDERVEER, *President.*

E. H. SQUIBB, *Secretary.*

The annual report of this Executive Committee to the General Meeting was next read and approved.

Dr. Ruggles then reported that he had audited the Treasurer's accounts and found them in accord. The Committee then accepted this report.

Adjourned at 11:25 a. m.

E. H. SQUIBB, *Secretary.*

NEW YORK COUNTY MEDICAL ASSOCIATION.

ANNUAL REPORT.

The scientific work of this Association during the period extending from October, 1896, to October, 1897, is represented by the following synopsis :

PRACTICE OF MEDICINE.

At the meeting held Oct. 19, 1896, a paper was read on "Cardiac Disturbances from Gastric Irritation," by Dr. Henry Illoway. The paper was discussed by Drs. Newman and Leszynsky, and the discussion closed by Dr. Illoway.

March 15, 1897, there was a special discussion on "The Compulsory Inspection of Cases of Tuberculosis," which was opened by Dr. George B. Fowler, of the City Health Department, and continued by Drs. White and Fischer.

April 19, 1897, a paper on "The Treatment of Diphtheria in Private Practice, by Antitoxin, a Comparison with Other Methods," by Dr. James J. Concanon. Discussed by Dr. Philhower, of Nutley, N. J., and by Drs. Rupp, Seipert, Lambert, and Fischer, and closed by Dr. Concanon.

May 17, 1897, a paper on "The Treatment of Pertussis," by Dr. Louis Fischer. Discussed by Drs. Dessau and Quinlan, and closed by Dr. Fischer.

June 21, 1897, a paper on "The Bi-parietal Diameter, the Chief Symptom and Diagnostic Criterion of Tuberculosis," by Dr. Mark I. Knapp. Discussed by Drs. Quimby and Concanon, and closed by Dr. Knapp.

SURGERY.

October 19, 1896, a paper on "The Treatment of Follicular Abscess of the Fossa Navicularis with Attendant Fistula," by Dr. Charles H. Chetwood. Discussed by Dr. Nordeman, and closed by Dr. Chetwood.

November 16, 1896, a paper on "Appendicitis Complicating Pregnancy," by Dr. Robert Abrahams. Discussed by Drs. Mundé, Morris, Lusk, Meyer, Garrigues, and Illoway, and closed by Dr. Abrahams.

December 21, 1896, a paper on "Some Anomalies in Anatomy," by Dr. R. Harcourt Anderson. Discussed by Drs. Bryant, Lusk, Gallant, Abrahams, and Proben, and closed by Dr. Anderson.

March 15, 1897, a paper on "Balsam Pern and Castor Oil as a Surgical Dressing; a Study of 26,000 Cases," by Dr. A. E. Gallant. Discussed by Drs. Van Arsdale, Wiggin, and Von Dönhoff, and by Dr. Gallant.

On the same evening, a paper was read on "The Results of Chemical Electrolysis *versus* Divulsion or Cutting, in the Treatment of Urethral Strictures," by Dr. Robert Newman. Discussed by Dr. Schavoir, of Stamford, Conn., and by Dr. Tracey, and closed by Dr. Newman.

April 19, 1897, a paper on "Urethroscopic Photographs," by Dr. Ferd. C. Valentine. Discussed by Drs. Beck, Manley, and Newman, and closed by Dr. Valentine.

June 21, 1897, a paper on "The Genital Phenomena of Renal Calculi," by Dr. Robert Abrahams. Discussed by Drs. Newman, Manley, and Bangs, and closed by Dr. Abrahams.

DISEASES OF THE THROAT AND NOSE.

May 17, 1897, a paper on "Atrophic Rhinitis," by Dr. H. B. Douglass. Discussed by Drs. Quinlan, Chappell, Harris, and Concanon, and closed by Dr. Douglass.

EXHIBITION OF CASES, SPECIMENS, ETC.

November 16, 1896, Dr. T. H. Manley presented an enlarged kidney, the seat of an abscess; also twenty-six inches of intestine which were excised in a case of strangulated hernia.

December 21, 1896, Dr. John F. Erdmann presented a case of fracture of the humerus, with involvement of the musculo-spiral nerve. Also Dr. R. Harcourt Anderson exhibited some antiseptic roll cases for instruments, made of linen.

April 19, 1897, Dr. S. F. Brothers demonstrated some new battery arrangements for purposes of light, cautery, and motor.

May 17, 1897, Dr. Abrahams presented a patient with general lymphadenitis.

At the annual meeting in January, 1897, the following officers were elected:

President—DR. JOSEPH E. JANVRIN.

Vice-President—DR. J. B. WHITE.

Recording Secretary—DR. M. C. O'BRIEN.

Corresponding Secretary—DR. NATHAN G. BOZEMAN.

Treasurer—DR. JOHN H. HINTON.

Member of Executive Committee—DR. N. J. HEPBURN.

At the meeting held February 15, 1897, the President-elect, Dr. Joseph E. Janvrin, delivered an address on "The Abuse of Medical Charity." He dwelt particularly upon the great wrongs which were being practised by our dispensaries in the unscrupulous methods of prescribing for patients abundantly able to pay for medical attendance, thereby creating and fostering a system of pauperisation, using funds which had been donated simply for the benefit of the worthy poor for other persons than those actually entitled to its benefits and in that way, in his opinion, infringing upon the charters of the dispensaries.

In extending the benefits of the dispensary to those to whom it was never intended that such benefits should be extended, the directors of such institutions were doing a great injury to the patients and were also depriving the medical profession at large of patients who were pecuniarily able to pay for medical attendance; and the younger members of the profession in particular, as a result, were finding it almost impossible to make a respectable livelihood.

The sad duty devolves upon us to record the deaths of the following members of the Association during the past year:

Dr. Charles F. McCann, October 28, 1896.

Dr. Thomas H. Burchard, November 14, 1896.

Dr. Luis F. Sass, November 19, 1896.

Dr. Lawrence J. McNamara, January 28, 1897.

Dr. Robert H. Hayes, March 8, 1897.

Dr. Clark Wright, March 16, 1897.

Dr. J. Lewis Smith, June 9, 1897.

Dr. William T. Lusk, June 12, 1897.

Dr. James A. McLochlin, July 16, 1897.

Dr. William Thurman, July 21, 1897.

Dr. John J. Curran, July 24, 1897.

The foregoing report is respectfully submitted to the State Medical Association as a brief history of the scientific work of the New York County Medical Association during the current year.

JOSEPH E. JANVRIN, M. D., *President*.

PROCEEDINGS.

FOURTEENTH ANNUAL MEETING

OF THE

NEW YORK STATE MEDICAL ASSOCIATION.

HELD AT THE MOTT MEMORIAL LIBRARY, 611 MADISON AVENUE, NEW
YORK CITY, OCTOBER 12, 13, AND 14, 1897.

FIRST DAY, OCTOBER 12.

MORNING SESSION.

The meeting was called to order by the PRESIDENT, DR. CHARLES PHELPS, of New York county, at 10:30 a. m. In doing so, he expressed the hope and the belief that the scientific work of this session would equal, if not exceed, in importance the work of the preceding years, which had added so much of interest to the Transactions of this Association.

The report of the Committee of Arrangements was presented by the Secretary of that Committee, DR. CHARLES DENISON ; and upon motion, the report was accepted.

The annual report of the Council was then read by the SECRETARY.

It was moved and seconded that the report of the Council be accepted.

DR. THOMAS H. MANLEY, of New York county, said that he had listened with interest to the report, but he desired to ask what had been done with a series of resolutions submitted by him to the Council for action two years ago.

The SECRETARY said that the action taken by the Council had been stated in the volume of Transactions. According to his recollection of it, the Council had declined last year to take any action.

The *PRESIDENT* said that if the matter were in the Transactions it did not concern the Association at this time. The report was then approved.

The *SECRETARY* then called special attention of the members to the communication presented by the Rush Monument Association. He said that the project had arisen some years ago, with the original intention of obtaining through a committee small contributions throughout the country. Only a comparatively small amount had been raised in this way. At the last meeting of the American Medical Association, several members present had pledged to contribute one hundred dollars each. The resolution adopted last night in the Council meeting was, that a circular letter should be issued by the *SECRETARY*, incorporating in it the address of the Rush Monument Association. He was willing to do this work, but he felt that it would be of but little use without the hearty coöperation of the members of the Association.

DR. LEROY J. BROOKS, of Chenango county, moved that a committee be appointed by the State Association, and a sub-committee by each District Association, to take charge of the matter of collecting the money for the Rush Monument Association.

DR. E. M. LYON, of Clinton county, seconded the motion.

DR. MANLEY said that he believed some states had already made the same pledge, but this had been paid out of the treasury of the State Association. He thought this was the only way in which the New York State Medical Association could do this. It was a question whether it could be collected through the agency of committees, but there would be no question if we voted that it be paid out of the treasury. He knew of no more worthy use for the surplus in the treasury than to fulfill our pledge, and raise the necessary money. The homoeopaths had succeeded in doing for the Hahnemann monument in six months what we had been unable to do in a number of years.

DR. MANLEY then moved as an amendment, that the *TREASURER* be authorised, in conformity with the pledge of our representative in Philadelphia, to pay the sum of two thousand dollars for the New York State Medical Association.

DR. FERGUSON said that it was a serious matter to vote away at one time two thousand dollars without careful consideration, and he thought it would be well to postpone action upon the whole matter until next Thursday morning, October 14.

DR. FERGUSON then moved to defer action until this time.

DR. MANLEY withdrew his amendment, and *DR. BROOKS* with-

drew his motion with the understanding that action should be taken at that time.

The reports of the various District Associations were read by title.

AFTERNOON SESSION.

The meeting was called to order by the PRESIDENT at 1:45 p. m.

The SECRETARY announced the appointment of the following Nominating committee:

First District, DRS. JOHN SHARER and DOUGLAS AYRES.

Second District, DRS. E. M. LYON and E. D. FERGUSON.

Third District, DRS. H. W. CARPENTER and J. G. ORTON.

Fourth District, DRS. T. D. STRONG and DARWIN COLVIN.

Fifth District, DRS. J. E. JANVRIN and N. W. LEIGHTON.

At large, DR. J. W. S. GOULEY.

EVENING SESSION.

(PRESIDENT'S address and a scientific paper.)

SECOND DAY, OCTOBER 13.

MORNING SESSION.

The meeting was called to order by the PRESIDENT at 10:30 a. m.

AFTERNOON SESSION.

The meeting was called to order by the PRESIDENT at 2:15 p. m.

EVENING SESSION.

Devoted to scientific work, followed by the usual collation.

THIRD DAY, OCTOBER 14.

MORNING SESSION.

The meeting was called to order by the VICE-PRESIDENT, DR. E. M. LYON, at 10:30 a. m.

The SECRETARY presented the following report of the Nominating Committee:

President—DR. DOUGLAS AYRES, of Fort Plain.

Vice-president, Second District—DR. H. W. CARPENTER, of Oneida.

Vice-president, Third District—DR. C. E. FRITTS, of Hudson.

Vice-president, Fourth District—DR. C. C. FREDERICK, of Buffalo.

Vice-president, Fifth District—DR. N. W. LEIGHTON, of Brooklyn.

MEMBERS OF THE COUNCIL.

First District—DR. W. H. ROBB, of Amsterdam.

Second District—DR. E. M. LYON, of Plattsburgh.

Third District—DR. W. L. AYER, of Owego.

Fourth District—DR. Z. J. LUSK, of Warsaw.

Fifth District—DR. J. G. TRUAX, of New York.

On motion, the report was accepted and adopted, and the SECRETARY was authorized to cast one ballot for the list of names as read.

DR. FERGUSON said that on the first morning a matter had been brought up and postponed for this morning. Various members of the Association had conferred together on the subject, and the Association was probably prepared now for action. He referred to the question of appropriating money from the treasury of the Association to subscribe to the Rush Monument fund. The profession of the country, and particularly certain states, were, at least, morally pledged to subscribe to this fund, and a number of these pledges had been made good. It was expected that the minimum amount from this state would be two thousand dollars. It had been proposed that this sum of two thousand dollars be contributed from our treasury. The money was at hand, and could be spared, so far as immediate needs were concerned. The more he had thought of this matter, the more had he become convinced of the propriety of such a course.

DR. F. H. WIGGIN said that it must have been impossible for any medical member of the Association to listen to the appeal of Dr. Gihon in Washington without feeling a certain amount of shame that he was a member of that profession, because of the apathy and indifference that had been shown in regard to this matter of honouring the late Dr. Rush. The members of the other

school had had little difficulty in raising \$78,000 in a comparatively short time for a monument to Hahneman. We should be able to do at least as much. It has been repeatedly asserted in Philadelphia that the profession in New York state was divided, and that the other states would be willing to do as much in proportion as New York.

DR. DOUGLAS AYRES said that at first he had been in doubt as to the wisdom of the motion under discussion, but now he felt that we could hardly contribute from our treasury to a more worthy object.

DR. E. ELLIOTT HARRIS, of New York, said that he had been present in Philadelphia on the occasion referred to and had been impressed with the fact that the smaller states had actually pledged to contribute two thousand dollars. He thought such a contribution from us would do much to increase the prestige of this Association.

DR. H. D. DIDAMA favoured the contribution, not only as a worthy act, but as a measure calculated to indirectly benefit the Association.

DR. THOMAS D. STRONG thought it very much better that the money should go from this Association as a direct vote, rather than from the members of the Association as a private contribution. It placed us in a different light as a state organisation, and it placed us on record as worthily sustaining the American Medical Association better than could be done in any other way. He hoped the motion would be voted upon favourably.

DR. J. W. S. GOULEY expressed himself as heartily in favour of making this appropriation.

The motion was then put, and carried without a dissenting vote.

The following Committee on Hospital and Dispensary Abuses was announced: Drs. F. H. WIGGIN, S. B. W. MCLEOD, and PARKER SYMS, of New York city, DR. A. A. HUBBELL, of Buffalo, and DR. E. D. FERGUSON, of Troy.

After the completion of the scientific programme, DR. CHARLES PHELPS said: It is a great pleasure to introduce to you officially the next PRESIDENT of the Association, who is so well known that he requires no more than this formal introduction—DR. DOUGLAS AYRES.

DR. DOUGLAS AYRES: *Gentlemen*—It gives me great pleasure to thank you for the honour extended to me. It was something I little expected when I came here, and coming, as it does, it touches, I assure you, a tender cord. I am always willing to

work in the ranks, and shall manifest the same, if not greater, interest in this position that you have given me. I beg to say that with your co-operation I will do all that lies within my power to make the next meeting as interesting and profitable as any that have gone before.

There is a word I would like to say with regard to the attendance at our meetings, and it is this: That if each one of us could interest himself in a little missionary work, and induce some other member of our large membership to be present at our meetings, it would be certainly very desirable. Let me ask those who are here to communicate with other members, and try to induce them to attend. I again thank you.

On motion of the SECRETARY, the Fourteenth Annual Meeting was declared adjourned at 12:30 p. m.

ANNUAL REPORT OF THE COUNCIL
AND
MINUTES OF THE SESSIONS OF THE COUNCIL
FOR THE YEAR 1897.

The Council met in its fourteenth annual session at the Mott Memorial Library, on Monday evening, October 11, 1897, and the session was opened at 8:30 o'clock.

Present : The chairman, Dr. Charles Phelps, and Drs. Bemus, Brooks, Denison, Ferguson, Gouley, Lyon, Robb, Sharer, Truax, Wiggin.

The Secretary presented the following list of applicants for Fellowship, each of the applications being regularly approved, viz. : J. H. Witter, Henry C. Buswell, J. V. E. Winne, T. E. Ballard, J. W. Sheffield, F. G. Fielding, George T. Church, John A. Fordyce, E. Eliot Harris, Richard Kalish, Geo. D. McGauvan, Douglas H. Stewart, Wickes Washburn, Alexander Trautman, W. B. Reid, William E. Hayes, W. R. Marsden, A. B. Santry, Edward G. Stout.

On motion they were appointed Fellows.

The Secretary read the following

Report of the Committee on Publications.

The Committee on Publications reports that an edition of one thousand copies of Volume 13 of the Transactions has been printed and distributed to those of our membership entitled to receive copies, and to the state medical societies, certain libraries, and exchanges.

The volume contains 632 pages, and compares favourably with the other volumes of the series.

The total cost of the volume and its distribution was about \$1,500. That includes \$100 paid for assistance in editorial work, and the stenographic work at the meeting.

[Signed]

E. D. FERGUSON,

Chairman and Editor.

The report was accepted.

The Treasurer reported as follows :

NEW YORK STATE MEDICAL ASSOCIATION.

ANNUAL REPORT OF THE TREASURER FROM OCTOBER 1, 1896, TO OCTOBER 1, 1897.

RECEIPTS—GENERAL FUND.

Balance from last report	\$3,337.48	
Dues	2,000.00	
Initiation fees	125.00	
Sale of Transactions	9.00	
Interest	85.00	
	<hr/>	\$5,556.48

DISBURSEMENTS.

Sundries, including Transactions, . . .	\$1,866.14	
Postage stamps	132.60	
Express and freight	47.69	
	<hr/>	\$2,046.43

Balance in General Fund, October 1, 1897, \$3,510.05

LIBRARY AND BUILDING FUND.

Amount at last report	\$2,920.91	
Interest.	87.50	
	<hr/>	3,008.41

Total funds in treasury, October 1, 1897, \$6,518.46

This report shows a net increase in all the funds of \$260.07.

[Signed] E. D. FERGUSON, *Treasurer.*

The report was accepted.

Thirteenth Annual Report of the Library Committee of the New York State Medical Association, October 11, 1897.

The Library Committee has the honour to present the thirteenth annual report on the library of the Association. Since the last report only thirteen volumes were received. Among these were some Transactions of societies. Beside, the *Index Medicus* for the year was regularly received. An interesting report, by

J. M. Atkinson, M. B., of Hong Kong, on the prevalence of the bubonic plague during the years 1895-'6, was contributed by Doctor Stuart Eldridge of Yokohama. On the first day of October, 1896, the library consisted of 9,538 volumes; adding to this number the thirteen volumes since received gives, on October 1, 1897, the total of 9,551 volumes now in the library. During the current year ending September 30, one hundred and three visitations were made to the library by Fellows of the Association, other persons, and medical students.

J. W. S. GOULEY, M. D.,

Director of the Library and Chairman of the Committee.

The report was accepted.

The following communication was presented and received :

U. S. DEPARTMENT OF AGRICULTURE,
BUREAU OF ANIMAL INDUSTRY,
WASHINGTON, D. C., Oct. 27, 1896.

E. D. Ferguson, M. D., Secretary New York State Medical Association, Troy, New York:

DEAR DOCTOR :—I am in receipt of your recent favour transmitting certified copy of resolutions recently passed at the New York meeting, and desire to thank you both for the favour and for the interest shown in assisting to prevent the consummation of the vicious attack upon scientific investigations in the District of Columbia, and ultimately elsewhere throughout the country. I think it well for New York Senators and Members to have their attention called to the necessity for adverse action upon Senate Bill 1552 soon after the reassembling of Congress, and we cannot be too sure of success in defeating the measure in question.

With kindest regards, I am,

Very truly yours,

G. M. BRUMBAUGH,

Assistant Chief of Bureau.

The following communications were presented :

SYKESVILLE, Md., Oct. 1, 1897.

Charles Phelps, M. D., President New York State Medical Association, 34 W. 37th St., New York, N. Y.:

DEAR DOCTOR:—The delegates from your state at the recent meeting of the American Medical Association in Philadelphia, have pledged the co-operation of the profession represented by them in raising their proportional share of the amount required to erect a monument in the City of Washington to Benjamin Rush.

In order to make this memorial a creditable expression of the

patriotic sentiment of the medical profession of this country, and in accordance with the general understanding that \$100,000 will be necessary to accomplish this purpose in the artistic manner demanded by the spirit of the age, consistent with the exalted rank of medicine, and befitting the conspicuous locality assigned by the National Government, you are earnestly requested to take such action as you may deem best to collect these funds without delay.

Contributions forwarded to the secretary-treasurer will be promptly acknowledged and published in the Journal of the American Medical Association.

For the Rush Monument Committee,

GEORGE H. ROHE,
Secretary-Treasurer.

PHILADELPHIA, July 14, 1897.

*E. D. Ferguson, M. D., Secretary State Medical Association of
New York:*

MY DEAR DOCTOR:—At the recent meeting of the Association, it was

Resolved, That the Secretary be directed to request each State Medical Society to appoint a committee to take charge for that state of the raising of the sum of \$100,000 for the Rush Monument Fund. Several states were pledged to raise *at least* \$2,000. This was deemed the best plan by which to raise an amount sufficient to build a monument to Dr. Rush which will be a credit to our profession.

Please notify me at your earliest convenience of the action taken by your state, with the names of the committee.

Yours very truly,
W. B. ATKINSON.

On motion the matter was referred to the Secretary with the direction that a circular which should include the address of the chairman of the Rush Monument Association made at the last meeting of the American Medical Association should be issued to the Fellows of the Association, soliciting subscriptions in aid of the proposed monument.

In view of the frequent complaints during several years, and this year in particular, that many failed to receive the programme, it was voted that in the future the programmes be distributed in sealed envelopes with letter postage.

The bill of the Committee of Arrangements for postage, stationery, and mailing for \$16.45 was audited and ordered paid.

On motion the Council adjourned.

[Signed] E. D. FERGUSON, *Secretary.*

The new Council met on the adjournment of the annual session of the Association, Oct. 14, 1897.

Present : The chairman, Dr. Ayers, and Drs. Brooks, Carpenter, Denison, Ferguson, Gouley, Hannan, Leighton, Lyon, and Wiggin.

On motion the sum of one hundred dollars was appropriated for the Mott Memorial Library.

A bill of Angell Printing House for \$75.95 was audited and ordered paid.

The meeting for 1898 was fixed for Oct. 18, 19, and 20.

The members of the Council for the Fifth District were constituted a Committee of Arrangements with power to add to their number.

The members of the Council for the Second District were constituted a Committee on Publication with the Secretary as Chairman and Editor.

The following Committee on Attendance was appointed : First District, Dr. Ayers ; Second District, Dr. Lyon ; Third District, Dr. Brooks ; Fourth District, Dr. W. M. Bemus.

[Signed] E. D. FERGUSON, *Secretary*.

LIST OF FELLOWS.

1897.

LIST OF FELLOWS..

BY DISTRICT AND COUNTY.

FIRST OR NORTHERN DISTRICT.

FULTON COUNTY.

Original. Blake, Clarence R. Northville.
Drake, D. Delos. Johnstown.
Edwards, John. Gloversville.

3

HAMILTON COUNTY.

McGann, Thomas. Wells.

1

HERKIMER COUNTY.

Casey, J. E. Mohawk.
Douglass, A. J. Ilion.
Douglas, Edgar H. Little Falls.
Garlock, William D. Little Falls.
Original. Glidden, Charles H. Little Falls.
Greene, H. H. Paine's Hollow.
Hayes, Wm. E. Frankfort.
Original. Potter, Vaughan C. Starkville.
Santry, A. B. Little Falls.
Original. Sharer, John P. Little Falls.
Original. Young, John D. Starkville.

11

JEFFERSON COUNTY.

Founder. Crowe, J. Mortimer. Watertown.
Original. Johnson, Parley H. Adams.

2

LEWIS COUNTY.

Crosby, Alexander H. Lowville.
Douglass, Charles E. Lowville.
Joslin, Albert A. Martinsburgh.
Kelley, John D. Lowville.

4

MONTGOMERY COUNTY.

Original. Ayres, Douglas. Fort Plain.
Caldwell, Nathan A. Hageman's Mills.
French, S. H. Amsterdam.
Original. Johnson, Richard G. Amsterdam.
Klock, Charles M. St. Johnsville.
Original. Leach, H. M. Charlton City, Mass.
Meyer, George L. Stone Arabia.
Parr, John. Buell.
Parsons, W. W. D. Fultonville.
Founder. Robb, William H. Amsterdam.
Simons, Frank E. Canajoharie.
Smyth, Arthur V. H. Amsterdam.

12

ONEIDA COUNTY.

Armstrong, James A. Clinton.
Original. Bagg, Moses M. Utica.
Barnum, D. Albert. Cassville.
Original. Blumer, G. Alder. Utica.
Bond, George F. M. Utica.
Original. Booth, Wilbur H. Utica.
Original. Brush, Edward N. Towsen, Md.
Churchill, Alonzo. Utica.
Clarke, Wallace. Utica.
Dodge, Amos P. Oneida Castle.
Douglass, James W. Booneville.
Ellis, J. B. Whitesborough.
English, G. P. Booneville.
Fitzgerald, John F. Rome.
Fraser, Jefferson C. Ava.
Fuller, Earl D. Utica.

- Gibson, William M. Utica.
 Holden, Arthur L. Utica.
 *Hughes, Henry R. Clinton.
- Original. Hunt, James G. Utica.
 Kuhn, William. Rome.
 Marsden, W. R. Utica.
 Munger, Charles. Knoxboro.
 Nelson, William H. Taberg.
 Nold, John B. Utica.
 Palmer, Henry C. Utica.
 Palmer, Walter B. Utica.
 Phelps, George G. Utica.
- Founder. Porter, Harry N. Washington, D. C.
 Reid, Christopher C. Rome.
 Reid, W. B. Utica.
 Russell, Charles P. Utica.
 Scully, Thomas P. Rome.
 Swartwout, Leander. Prospect.
 Sweeney, James M. Utica.
 Tefft, Charles B. Utica.
 West, Joseph E. Utica.

37

OSWEGO COUNTY.

- Bacon, Charles G. Fulton.
 Bates, Nelson W. Central Square.
 Cooley, F. L. Oswego.
 Cooley, R. N. Hannibal Centre.
- Original. DeWitt, Byron. Oswego.
 Huntington, John W. Mexico.
 Johnson, George P. Mexico.
 Marsh, E. Frank. Fulton.
 Todd, John P. Parish.

9

ST. LAWRENCE COUNTY.

- Cook, Guy Reuben. Louisville.
 Stout, E. G. Ogdensburgh.

2

*Deceased.

SECOND OR EASTERN DISTRICT.

ALBANY COUNTY.

- Abrams, H. C. Newtonville.
 Founder. Bailey, Theodore P. Albany.
 Haynes, John U. Cohoes.
 Montmarquet, J. D. Cohoes.
 Founder. *Peters, Samuel. Cohoes.
 Rulison, L. B. Watervliet.
 Founder. Sabin, William B. Watervliet.
 Original. Van Vranken, Adam T. Watervliet.
 Zeh, Merlin J. Watervliet.

9

CLINTON COUNTY.

- Founder. Dodge, Lyndhurst C. Rouse's Point.
 Holcomb, O. A. Plattsburgh.
 Founder. Lyon, E. M. Plattsburgh.

3

COLUMBIA COUNTY.

- Original. Benham, John C. Hudson.
 Bradley, O. Howard. Hudson.
 Clum, Franklin D. Cheviot.
 Fritts, Crawford Ellsworth. Hudson.
 Johnson, Henry W. Hudson.
 Original. Lockwood, J. W. Philmont.
 Original. Smith, H. Lyle. Hudson.
 Vedder, George W. Philmont.
 Wheeler, John T. Chatham.
 Founder. Wilson, Thomas. Claverack.
 Woodruff, R. Allen. Philmont.
 Woodworth, T. Floyd. Kinderhook.

12

ESSEX COUNTY.

- Founder. Barton, Lyman. Willsborough.
 Barton, L. G. Willsborough.

*Deceased.

- Original. D'Avignon, Francis J. Au Sable Forks.
 Original. LaBell, Martin J. Lewis.
 Original. Riley, Andrew W. Au Sable Forks.
 Original. Robinson, Ezra A. Jay.
 Original. Turner, Melvin H. Ticonderoga.

7

GREENE COUNTY.

- Original. Conkling, George. Durham.
 Getty, A. H. Athens.
 Original. Selden, Robert. Catskill.

3

RENSSELAER COUNTY.

- Original. Allen, Amos. Grafton Centre.
 Founder. Allen, Charles S. Rensselaer.
 Allen, William L. Rensselaer.
 Baynes, Joseph E. Troy.
 Bissell, James H. Troy.
 Bonesteel, H. F. Troy.
 Founder. Bonesteel, William N. Troy.
 Original. Bontecou, Reed B. Troy.
 Boyce, Elias B. Averill Park.
 Founder. Burbeck, Charles H. Troy.
 Burton, Henry B. Troy.
 Cahill, John T. Hoosick Falls.
 Church, Thomas C. Valley Falls.
 Original. Cooper, William C. Troy.
 Crounse, Andrew C. Melrose.
 Dickinson, M. D. Troy.
 Dickson, Thomas Gordon. Troy.
 Founder. Ferguson, E. D. Troy.
 Founder. Finder, William. Troy.
 Gravatt, Edwin J. Troy.
 Greenman, C. E. Troy.
 Founder. Hannan, James C. Hoosick Falls.
 Hannan, Thomas H. Hoosick Falls.
 Founder. Harvie, J. B. Troy.
 Original. Heimstreet, Thomas B. Troy.
 Original. Houston, David W. Troy.

- Hutton, M. B. Valley Falls.
 Keith, Halbert Lyon. Upton, Mass.
 Original. Lyon, George E. St. Louis, Mo.
 Lyons, Edward L. Troy.
 Original. Magee, Daniel. Troy.
 Marsh, James P. Troy.
 Morehouse, E. W. Troy.
 Founder. Nichols, Calvin E. Troy.
 Founder. Nichols, William H. West Sand Lake.
 Phelan, Francis. Troy.
 Original. Rogers, S. Frank. Troy.
 Founder. Rousseau, Zotique. Troy.
 Founder. Seymour, W. Watkyns. Troy.
 Original. Skinner, Smith A. Hoosick Falls.
 Smith, Frederick A. Troy.
 Tompkins, Fred J. Lansingburgh.
 Ward, R. H. Troy.

SARATOGA COUNTY.

- Allen, Henry J. Corinth.
 Bullard, T. E. Schuylerville.
 Church, George T. Saratoga.
 Founder. Comstock, George F. Saratoga Springs.
 Original. Crombie, Walter C. Mechanicsville.
 Curtis, P. C. Round Lake.
 Original. Dunlop, John J. Waterford.
 Gow, Frank F. Schuylerville.
 Founder. Grant, Charles S. Saratoga Springs.
 Original. Hall, William H. Saratoga Springs.
 Founder. Hodgman, William H. Saratoga Springs.
 Hudson, George. Stillwater.
 Humphrey, J. F. Saratoga Springs.
 Inlay, Erwin G. Saratoga Springs.
 Original. Johnston, Ianthus G. Greenfield Centre.
 Keefer, Charles W. Mechanicsville.
 Kniskern, A. C. Mechanicsville.
 Moriarta, D. C. Saratoga Springs.
 Original. Murray, Byron J. Saratoga Springs.
 Palmer, F. A. Mechanicsville.
 Parent, J. S. Birchtown.

- Original. *Preston, John R. Schuylerville.
 Founder. Reynolds, Tabor B. Saratoga Springs.
 Sherer, John D. Waterford.
 Sherman, F. J. Ballston.
 Smith, F. A. Corinth.
 Original. Stubbs, Roland H. Waterford.
 Swan, William E. Saratoga Springs.
 Swanick, A. A. Saratoga Springs.
 Sweetman, J. T., Jr. Boston.
 Thompson, Amos W. Saratoga Springs.
 Varney, Miles E. Saratoga Springs.
 Webster, W. B. Schuylerville.
 Zeh, Edgar. Waterford.

34

SCHENECTADY COUNTY.

- *Hammer, Charles. Schenectady.
 Original. Mc Donald, George E. Schenectady.
 Mc Dougall, R. A. Duaneburgh.
 Original. Reagles, James R. Schenectady.
 Original. Van Zandt, Henry C. Schenectady.
 Veeder, Andrew T. Pittsburgh, Pa.

6

SCHOHARIE COUNTY.

- Original. Hagadorn, William. Gilboa.
 Original. Kingsley, Henry F. Schoharie.

2

WARREN COUNTY.

- Fielding, F. G. Glens Falls.
 Fitzgerald, David J. Glens Falls.
 Henning, Thomas I. Glens Falls.
 Hunt, W. J. Glens Falls.
 Original. Martine, Godfrey R. Glens Falls.
 Montgomery, J. J. Luzerne.

6

*Deceased.

WASHINGTON COUNTY.

Lambert, John. Salem.

* Long, Alfred J. Whitehall.

2

THIRD OR CENTRAL DISTRICT.

BROOME COUNTY.

Allen, S. P. Whitney's Point.

Founder. Chittenden, Joseph H. Binghamton.

Dudley, Dwight. Maine.

Eastman, L. O. Union.

Original. Eli, Henry Oliver. Binghamton.

Farnham, Le Roy D. Binghamton.

Farrington, John M. Binghamton.

Forker, Frederick L. Binghamton.

Greene, Clark W. Binghamton.

Guy, J. D. Chenango Forks.

Original. Hills, Lyman H. Binghamton.

Hough, F. P. Binghamton.

Killen, Jack, Binghamton.

Knapp, W. H. Union Centre.

Meacham, Isaac D. Binghamton.

Michael, F. M. Binghamton.

Moore, William A. Binghamton.

Founder. Orton, John G. Binghamton.

Pierce, Edward A. Binghamton.

Pierson, G. E. Kirkwood.

Place, John F., Jr. Binghamton.

Founder. Putnam, Frederick W. Binghamton.

Original. Race, W. F. Kearney, Neb.

Founder. Richards, Charles B. Binghamton.

Rodgers, Harris C. Binghamton.

Seymour, Ralph A. Whitney's Point.

Slater, Frank Ellsworth. Binghamton.

Smith, Edward L. Binghamton.

White, William A. Binghamton.

29

* Deceased.

CAYUGA COUNTY.

- Kenyon, Frank. Scipio.
 Original. Kenyon, M. Moravia.
 Original. Laird, William R. Auburn.
 Lewis, Le Roy. Auburn.
 Founder. Sawyer, Conant. Auburn.
 Original. Tripp, John D. Auburn.
 Woodruff, E. Gould, Auburn.

7

CHEMUNG COUNTY.

- Original. Brown, Charles W. Washington, D. C.
 Drake, E. G. Elmira.
 Fischer, J. C. Elmira.
 Original. Ross, Frank W. Elmira.
 Squires, Charles L. Elmira.
 Original. Wales, Theron A. Elmira.

6

CHENANGO COUNTY.

- Original. Blair, Louis P. McDonough.
 Original. Brooks, Leroy J. Norwich.
 *Copley, Heman D. Bainbridge.
 Douglas, George. Oxford.
 Hand, S. M. Norwich.
 Hayes, Philetus A. Afton.
 Original. Johnson, Leonard M. Greene.
 Original. Lyman, H. C. Sherburne.
 Noyes, James B. New Berlin.
 Packer, Thurston G. Smyrna.
 Smith, Samuel L. Smithville.
 Thompson, R. A. Norwich.
 Van Wagner, L. A. Sherburne.
 Williams, George O. Greene.

14

CORTLAND COUNTY.

- Bradford, George D. Homer.
 Original. Clark, De Witt. Marathon.

* Deceased.

- Didama, E. A. Cortland.
 Halbert, M. L. Cincinnatus.
 Founder. Hendrick, Henry C. McGrawville.
 Higgins, F. W. Cortland.
 Founder. Jewett, Homer O. Cortland.
 Kenyon, Benjamin. Cincinnatus.
 Reese, Frank D. Cortland.

9

DELAWARE COUNTY.

- Drake, James B. Hancock.
 Morrow, William B. Walton.
 Sheffield, J. W. Sidney.
 Smith, George C. Delhi.
 Travis, Edward M. Eagle Grove, Ia.
 Winne, J. V. E. Sidney.

6

MADISON COUNTY.

- Original. Birdsall, Gilbert. N. Brookfield.
 Burhyte, O. W. Brookfield.
 Cavana, Martin. Oneida.
 Original. Carpenter, Henry W. Oreida.
 Drake, Frank C. Oneida.
 Huntley, James F. Oneida.
 Miles, George W. Oneida.
 Original. Nicholson, A. R. Madison.

8

ONONDAGA COUNTY.

- Original. Aberdein, Robert. Syracuse.
 Brown, Ulysses H. Syracuse.
 Campbell, A. J. Syracuse.
 Founder. Dallas, Alexander J. Syracuse.
 Founder. Didama, Henry D. Syracuse.
 Original. Donohue, Florince O. Syracuse.
 Earle, George W. Tully.
 Original. Edwards, Amos S. Syracuse.

- Original. Edwards, George A. Syracuse.
 Flanigan, John R. Syracuse.
 Original. Hatch, C. A. Syracuse.
 Founder. Head, Adelbert D. Syracuse.
 Original. Jacobson, Nathan. Syracuse.
 Founder. Kneeland, Jonathan. South Onondaga.
 *Magee, Charles M. Syracuse.
 Original. McNamara, Daniel. Syracuse.
 Original. Munson, W. W. Otisco.
 Founder. Parsons, Israel. Marcellus.
 Original. Saxer, Leonard A. Syracuse.
 Sears, F. W. Syracuse.
 Founder. Van de Warker, Ely. Syracuse.
 Original. Whitford, James. Onondaga Valley.

22

OTSEGO COUNTY.

- Original. Barney, C. S. Milford.
 Church, B. A. Oneonta.
 Founder. Leaning, John K. Cooperstown.
 Original. Martin, John H. Otego.
 Original. *Merritt, George. Cherry Valley.
 Sweet, Joshua J. Unadilla.

6

SCHUYLER COUNTY.

- King, James K. Watkins.
 Roper, P. B. Alpine.
 Leffingwell, E. D. Watkins.
 Smelzer, Baxter T. Montour Falls.

4

SENECA COUNTY.

- Bellows, George A. Waterloo.
 Blaine, Myron D. Willard.
 Clark, George W. Waterloo.
 Founder. Lester, Elias. Seneca Falls.

*Deceased.

Seaman, Frank G. Seneca Falls.
Welles, S. R. Waterloo.

6

TIOGA COUNTY.

Original. Ayer, W. L. Owego.
 Cady, George M. Nichols.

2

TOMPKINS COUNTY.

Founder. Beers, John E. Danby.
 Biggs, Chauncey P. Ithaca.
 Flickinger, John, Trumansberg.

3

FOURTH OR WESTERN DISTRICT.

ALLEGHANY COUNTY.

Original. Wakely, Benjamin C. Angelica.
 Witter, G. H. Wellsville.

2

CATTARAUGUS COUNTY.

Eddy, John L. Olean.
Ellsworth, Victor A. Boston, Mass.
Lake, Albert D. Gowanda.
Mudge, Selden J. Olean.
Original. Tompkins, Orrin A. East Randolph.

5

CHAUTAUQUA COUNTY.

Founder. Ames, Edward. Kalamazoo, Mich.
 Bemus, Morris N. Jamestown.
 Bemus, William Marvin. Jamestown.
 Blanchard, R. N. Jamestown.
Founder. Dean, Harmon J. Brocton.

Moore, Macdonald. Fredonia.
 7 Rolph, R. T. Fredonia.
 Founder. Strong, Thomas D. Westfield.

8

ERIE COUNTY.

Andrews, Charles H. Holland.
 Original. Atwood, H. L. Collins Centre.
 Original. Bartlett, Frederick W. Buffalo.
 Benedict, Arthur L. Buffalo.
 Bennett, Arthur G. Buffalo.
 Bergtold, W. H. Buffalo.
 Original. Boies, Loren F. East Hamburg.
 Original. Briggs, Albert H. Buffalo.
 Brown, George L. Buffalo.
 Bryant, Percy. Buffalo.
 Burghardt, Francis Augustus. Buffalo.
 Buswell, Henry C. Buffalo.
 Clendenan, C. W. N. Tonawanda.
 Cohen, Bernard. Buffalo.
 Congdon, Charles E. Buffalo.
 Cooke, Almon H. Buffalo.
 Cott, George F. Buffalo.
 Founder. Cronyn, John. Buffalo.
 Original. *Dagenais, Alphonse. Buffalo.
 Original. Daniels, Clayton M. Buffalo.
 Dayton, C. L. Buffalo.
 Original. Dorland, Elias T. Buffalo.
 Fowler, Joseph. Buffalo.
 Frederick, Carlton C. Buffalo.
 Gould, Cassius W. Buffalo.
 Green, Stephen S. Buffalo.
 Original. Greene, DeWitt C. Buffalo.
 Founder. Greene, Joseph C. Buffalo.
 Original. Greene, Walter D. Buffalo.
 Original. Harrington, D. W. Buffalo.
 Hayd, Herman E. Buffalo.
 Heath, William H. Buffalo.
 Himmelsbach, George A. Buffalo.
 Howard, Charles F. Buffalo.

*Deceased.

- Founder. Hoyer, F. F. Tonawanda.
 Hubbell, Alvin A. Buffalo.
 Hunt, H. L. Orchard Park.
 Ingraham, Henry D. Buffalo.
 Jackson, William H. Springville.
 Original. Johnson, Thomas M. Buffalo.
 Jones, Allen A. Buffalo.
 Lapp, Henry. Clarence.
 Long, Ben D. Buffalo.
 McFarlane, William A. Springville.
 Mulford, Henry J. Buffalo.
 Original. Murray, William D. Tonawanda.
 Original. Pettit, John A. Buffalo.
 Phelps, William C. Buffalo.
 Pohlman, Julius. Buffalo.
 Rochester, DeLancy. Buffalo.
 Stockton, Charles G. Buffalo.
 Strong, Orville C. Colden.
 Taber, R. C. Tonawanda.
 Thornton, William H. Buffalo.
 Founder. Tremaine, William S. Buffalo.
 Trull, H. P. Williamsville.
 Twohey, John J. Buffalo.
 Wall, Charles A. Buffalo.
 Wheeler, Isaac G. Marilla.
 Whipple, Electa B. Buffalo.
 Willoughby, M. Buffalo.
 Founder. Wyckoff, Cornelius C. Buffalo.

GENESEE COUNTY.

- Andrews, Lewis B. Byron.
 Original. Crane, Frank W. Corfu.
 Founder. Jackson, Albert P. Oakfield.
 Prince, Alpheus. Byron.
 Stone, Frank L. Le Roy.
 Founder. Townsend, Morris W. Bergen.

LIVINGSTON COUNTY.

- Original. Briggs, William H. Hemlock Lake.
 Brown, J. P. Tuscarora.

- Dodge, Frank H. Mount Morris.
 Hagey, J. M. Mount Morris.
 Jones, George H. Fowlerville.
 Kneeland, B. T. Dalton.
 Original. Menzie, R. J. Caledonia.
 Original. Moyer, Frank H. Moscow.

8

MONROE COUNTY.

- Original. Backus, Ogden. Rochester.
 Original. Buckley, James. Rochester.
 Original. Burke, John J. A. Rochester.
 Curtis, D. F. Rochester.
 Original. Dunning, J. D. Webster.
 Fenno, Henry M. Rochester.
 Goler, George W. Rochester.
 Founder. Hovey, B. L. Rochester.
 Jones, S. Case. Rochester.
 Maine, Alva P. Webster.
 McDougall, William D. Spencerport.
 Founder. Moore, Edward M. Rochester.
 Original. Moore, Edward M., Jr. Rochester.
 Original. Moore, Richard Mott. Rochester.
 Original. O'Hare, Thomas A. Rochester.
 Original. Pease, Joseph. Hamlin.
 Reitz, Charles. Webster.
 Schopp, Justin H. Rochester.
 Snook, George M. Parma.
 Stocksclaeder, P. Rochester.

20

NIAGARA COUNTY.

- Eddy, George P. Lewiston.
 Huggins, William Q. Sanborn.
 Moore, Allan N. Lockport.

3

ONTARIO COUNTY.

- Founder. Bentley, Francis R. Cheshire.
 De Lauey, John Pope. Geneva.
 Original. Hicks, W. Scott. Bristol.
 Pratt, Frank R. Manchester.

Founder. Simmons, E. W. Canandaigua.
Original. Vanderhoof, Frederick D. Phelps.

6

ORLEANS COUNTY.

Original. Bailey, William C. Knoxville, Tenn.
Founder. Chapman, James. Medina.
Curtis, Daniel. Jeddo.
Original. Taylor, John H. Holley.
Founder. Tompkins, H. C. Knowlesville.

5

STEUBEN COUNTY.

Chittenden, Daniel J. Addison.
Conderman, George. Hornellsville.
Original. Dunn, Jeremiah. Bath.
Original. Ellison, Metler D. Canisteo.
Gilbert, Horatio. Hornellsville.
Hubbard, Chauncey G. Hornellsville.
Hunter, Nathaniel P. Jasper.
Original. Jamison, John S. Hornellsville.
Parkhill, C. S. Hornellsville.
Rudgers, Denton W. Hornellsville.
Walker, James E. Hornellsville.
Wallace, Edwin E. Jasper.

12

WAYNE COUNTY.

Founder. Arnold, J. Newton. Clyde.
Atwood, John W. Marion.
Brandt, J. S. Ontario Center.
Founder. Colvin, Darwin. Clyde.
Horton, David B. Red Creek.
Original. Ingraham, Samuel. Palmyra.
Original. Landon, Newell E. Newark.
Nutten, Wilbur F. Newark.
Original. *Sprague, John A. Williamson.
*Sprague, L. S. Williamson.
Original. Young, Augustus A. Newark.

11

*Deceased.

WYOMING COUNTY.

- Original. Ellinwood, A. G. Attica.
 Greene, Cordelia A. Castile.
 Hulette, G. S. Arcade.
 Lusk, Zera J. Warsaw.
 Mann, Carl C. Warsaw.
- Original. Palmer, George M. Warsaw.
- Original. Rae, Robert. Portageville.

7

YATES COUNTY.

- Oliver, William. Penn Yan.

1

FIFTH OR SOUTHERN DISTRICT.

DUTCHESS COUNTY.

- Baker, Benjamin N. Rhinebeck.
- Original. Barnes, Edwin. Pleasant Plains.
 Barton, Thomas J. Tivoli.
- Original. Bates, Xyris T. Poughkeepsie.
- Original. Bayley, Guy Carleton. Poughkeepsie.
- Founder. Coddington, George H. Amenia.
- Founder. Cramer, William. Poughkeepsie.
- Original. Fletcher, Charles L. Wing's Station.
 Howland, George T. Poughkeepsie.
 Julian, John M. Pleasant Valley.
- Founder. Leroy, Irving D. Pleasant Valley.
- Founder. Pultz, Monroe T. Stanfordville.
- Founder. Van Etten, Cornelius S. Rhinebeck.

13

KINGS COUNTY.

- Alleman, L. A. W. Brooklyn.
- Baker, Frank R. Brooklyn.
- Founder. Baker, George W. Brooklyn, E. D.
 Beardsley, William E. Brooklyn.
 Bierwirth, Julius C. Brooklyn.

- Original. Biggam, William H., Jr. Brooklyn.
 Original. Brundage, Amos H. Brooklyn.
 Original. Conway, John Francis. Brooklyn.
 Coffin, Laurence. Brooklyn.
 Creamer, Joseph, Jr. Brooklyn, E. D.
 Criado, Louis F. Brooklyn.
 Essig, George. Brooklyn.
 Feeley, James F. Brooklyn, E. D.
 Hicks, Edward E. Brooklyn.
 Huestis, W. B. Brooklyn.
 Hughes, Peter. Brooklyn.
 Hull, Thomas H. Brooklyn.
 Original. *Ilgen, Ernst. Brooklyn.
 Original. Jenkins, John A. Brooklyn, E. D.
 Jewett, F. A. Brooklyn.
 Original. Leighton, Nathaniel W. Brooklyn.
 Little, Frank. Brooklyn.
 Original. Lloyd, T. Mortimer. Brooklyn.
 Original. McCollom, William. Brooklyn.
 Milbury, Frank S. Brooklyn.
 Original. Minard, E. J. Chapin. Brooklyn.
 Newman, George W. Brooklyn.
 Original. North, Nelson L. Brooklyn.
 Ostrander, George A. Brooklyn.
 Page, Emmett D. Brooklyn.
 Original. Paine, Arthur R. Brooklyn.
 Peele, Francis. Brooklyn.
 Original. Pray, S. R. Brooklyn.
 Price, Henry R. Brooklyn.
 Raynor, F. C. Brooklyn.
 Reed, Henry B. Brooklyn.
 Richardson, John E. Brooklyn.
 Risch, Henry F. W. Brooklyn.
 Rochester, Thomas M. Brooklyn.
 Founder. Rushmore, John D. Brooklyn.
 Original. Russell, William G. Brooklyn.
 Founder. Segur, Avery. Brooklyn.
 Original. Shepard, A. Warren. Brooklyn.
 Original. Sizer, Nelson Buell. Brooklyn.
 Founder. Squibb, Edward H. Brooklyn.
 Founder. Squibb, Edward R. Brooklyn.

- Original. Steinke, C. O. H. Brooklyn.
 Sullivan, John D. Brooklyn.
 Thwing, Clarence. Fort Wrangle, Alaska.
 Waterworth, William. Brooklyn.
 Wieber, Adolph. Brooklyn.
- Original. Williams, William H. Brooklyn.
 Founder. Wyckoff, Richard M. Brooklyn.

53

NEW YORK COUNTY.

- Adams, Calvin Thayer. New York.
 Agramonte, Aristides. New York.
 Agramonte, E. V. New York.
 Alexander, Samuel. New York.
- Original. Allen, S. Busby. New York.
 Allen, Thomas H. New York.
 Anderson, R. Harcourt. New York.
 Andrews, John L. New York.
- Original. Arcularius, Lewis. New York.
- Original. Arnold, Edmund S. F. New York.
 Arnold, Glover C. New York.
 Baldwin, F. A. New York.
 Bermingham, Edward J. New York.
- Original. Biggs, Herman M. New York.
- Founder. Bozeman, Nathan. New York.
 Bozeman, Nathan G. New York.
 Brodrick, William P. New York.
- Original. Bryant, Joseph D. New York.
- Original. Bull, Charles Steadman. New York.
 Bull, William T. New York.
 Campbell, Clarence G. New York.
 Carr, William. New York.
- Original. Carter, H. Skelton. New York.
- Original. Chauveau, Jean F. New York.
- Original. Chrystie, T. M. Ludlow. New York.
 Coley, William B. New York.
 Collins, Stacy B. Seaford, Sussex Co., Del.
 Comfort, John E. New York.
- Founder. Conover, William S. New York.
 Conway, John R. New York.
- Original. Curry, Walker. New York.
 Dallas, Alexander. New York.

- Dalton, W. R. I. New York.
 Davis, J. Griffith. New York.
 Davis, Robert C. New York.
 DeGarmo, W. B. New York.
 DeLandeta, J. B. New York.
 Delphey, Eden V. New York.
 Dench, Edward B. New York.
 Original. Denison, C. Ellery. New York.
 Original. Denison, Ellery. New York.
 Founder. Dennis, Frederic S. New York.
 Drake, W. F. New York.
 Original. Du Bois, Matthew B. New York.
 Dudley, A. Palmer. New York.
 Dunham, Edward K. New York.
 Original. Eastman, Robert W. New York.
 Einhorn, Max. New York.
 Original. Eliot, Ellsworth. New York.
 Enders, Thomas Burnham. New York.
 Erdmann, John F. New York.
 Farrington, Joseph O. New York.
 Ferguson, Frank. New York.
 Founder. Flint, Austin. New York.
 Flint, Austin, Jr. New York.
 Founder. Flint, William H. New York.
 Fordyce, John A. New York.
 Foster, George V. New York.
 Frankenberg, Jacob H. New York.
 Fridenberg, Edward. New York.
 Gleitsmann, J. W. New York.
 Founder. Gouley, John W. S. New York.
 Grauer, Frank. New York.
 Gray, Joseph F. New York.
 Gulich, A. Reading. New York.
 Gulich, Charlton R. New York.
 Hammond, Frederick Porter. New York.
 Harris, E. Eliot. New York.
 Original. Harrison, George Tucker. New York.
 Haubold, H. A. New York.
 Hepburn, Neil J. New York.
 Hillis, Thomas J. New York.
 Founder. Hinton, John H. New York.
 Founder. Hodgman, Abbott. New York.

- Hubbard, Dwight L. New York.
 Jackson, Charles W. New York.
 Founder. Janeway, Edward G. New York.
 Janvrin, J. E. New York.
 Jenkins, William T. New York.
 Judson, A. B. New York.
 Kalish, Richard. New York.
 Kelly, Thomas. New York.
 Kemp, William M. New York.
 King, Ferdinand. New York.
 Kneer, F. G. New York.
 Knipe, George. New York.
 Founder. Leale, Charles A. New York.
 Lewis, Robert. New York.
 Lichtschein, Louis. New York.
 Little, Albert H. New York.
 Lockwood, Charles E. New York,
 Ludlow, Ogden C. New York.
 Lukens, Anna. New York.
 Lusk, William C. New York.
 Founder. *Lusk, William T. New York.
 Lynch, Patrick J. New York.
 MacGregor, James R. New York.
 Mackenzie, J. C. New York.
 McAlpin, D. Hunter, Jr. New York.
 McBurney, Charles. New York.
 McGauran, George D. New York.
 McGillicuddy, T. J. New York.
 McGowan, John P. New York.
 McIlroy, Samuel H. New York.
 McLeod, Johnston. New York.
 Founder. McLeod, S. B. Wylie. New York.
 Original. McLochlin, James A. New York.
 Original. *McNamara, Laurence J. New York.
 McNicholl, Thomas A. New York.
 Maher, J. J. E. New York.
 Founder. Manley, Thomas H. New York.
 Marshall, Francis F. New York.
 Meier, Gottlieb C. H. New York.
 Original. Miller, William T. New York.
 Milliken, S. E. New York.

- Original. Miranda, Ramon L. New York.
 Moran, James. New York.
 Mott, Valentine. New York.
- Original. Murphy, John. New York.
- Original. Murray, Sandford J. New York.
- Original. Newman, Robert. New York.
- Founder. Nicoll, Henry D. New York.
- Original. Obendorfer, Isidor P. New York.
 O'Brien, Frederick William. New York.
 O'Brien, M. Christopher. New York.
 Ochs, Benjamin F. New York.
 Oppenheimer, H. S. New York.
 Oppenheimer, S. New York.
 Palmer, Edmund J. New York.
 Parker, Ransom J. New York.
- Original. Parsons, John. New York.
 Perry, John Gardner. New York.
 Phelps, Charles. New York.
- Original. Pooler, Hiram A. New York.
 Potter, E. Styles. New York.
 Pritchard, R. L. New York.
- Founder. Purple, Samuel S. New York.
 Read, Ira B. New York.
- Original. Ricketts, Benjamin M. Cincinnati, O.
 Roth, Julius A. New York.
 Ruggles, Augustus D. New York.
 Sanders, E. New York.
- Founder. Sayre, Lewis A. New York.
 Sayre, Reginald H. New York.
 Seaman, Louis L. New York.
 Shaw, Henry B. New York.
 Shea, Dennis L. New York.
 Shrady, Arthur M. New York.
 Shrady, John. New York.
 Shrady, John Eliot. New York.
 Silver, Henry M. New York.
 Simmons, Charles E. New York.
 Smith, Alexander H. New York.
- Original. *Smith, J. Lewis. New York.
- Original. Smith, Samuel W. New York.
- Original. Smith, Stephen. New York.

- Spicer, Walter E. New York.
 Stewart, Douglas H. New York.
 Stewart, F. E. New York.
 Stewart, George D. New York.
 Strong, Cyrus J. New York.
 Syms, Parker. New York.
 Founder. Thomas, T. Gaillard. New York.
 Thompson, Von Beverhout. New York.
 Trautman, Alex. New York.
 Truax, J. G. New York.
 Founder. Tucker, Carlos P. New York.
 Vincent, Ludger C. New York.
 Von Dönhoff, Edward. New York.
 Original. Wallach, Joseph N. New York.
 Walsh, Simon J. New York.
 Wandless, Henry W. New York.
 Founder. Ward, Charles S. New York.
 *Warner, Frederic M. New York.
 Warner, John W. New York.
 Washburn, Wickes. New York.
 Weston, Albert T. New York.
 White, Charles B. New York.
 White, J. Blake. New York.
 Founder. White, Whitman V. New York.
 Founder. Wiener, Joseph. New York.
 Wiggin, Frederick Holme. New York.
 Williams, Henry Smith. New York.
 Woodend, William E. New York.
 Original. Wyeth, John A. New York.
 Yankauer, Sidney. New York.

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ORANGE COUNTY.

- Conner, Milton C. Middletown.
 Davis, J. O. Howells.
 Potts, E. Port Jervis.
 Swartwout, H. B. Port Jervis.
 Townsend, Charles E. Newburgh.
 Vanderveer, J. C. Monroe.
 Vanderveer, J. R. Monroe.
 Woodhull, Edward D. Monroe.

8

* Deceased.

PUTNAM COUNTY.

Founder. Murdock, George W. Cold Spring.

Founder. Young, William. Cold Spring.

2

QUEENS COUNTY.

Original. Burns, William J. Sea Cliff.

Original. Rave, Edward G. Hicksville.

2

RICHMOND COUNTY.

Johnston, Henry C. New Brighton.

Martindale, F. E. Port Richmond.

Walser, William C. West New Brighton.

3

SUFFOLK COUNTY.

Original. Chambers, Martin L. Port Jefferson.

Hamil, Edward H. Newark, N. J.

Hulse, William A. Bay Shore.

Original. Lindsay, Walter. Huntington.

4

SULLIVAN COUNTY.

Crocker, Edwin. Narrowsburgh.

DeKay, William H. Parksville.

McWilliams, F. A. Monticello.

Original. Munson, J. A. Woodburne.

Piper, Charles W. Wurtsborough.

Stearns, Benjamin W. Long Eddy.

6

ULSTER COUNTY.

Original. Chambers, Jacob. Kingston.

Original. HoornBeek, Philip Du Bois. Wawarsing.

Founder. *Hühne, August. Rondout.

Original. Hühne, Frederick. Rondout.

Reed, Albert. Highland.

*Deceased.

Original. Van Hovenberg, Henry. Kingston.
 Ward, John J. Ellenville.

7

WESTCHESTER COUNTY.

Acker, Thomas J. Croton-on-Hudson.
 Original. Banks, George B. Hartsdale.
 Original. Brush, Edward F. Mount Vernon.
 Original. Coutant, Richard B. Tarrytown.
 Granger, William D. Mount Vernon.
 Original. *Huntington, Henry K. New Rochelle,
 Original. Lyons, G. A. New Rochelle.
 Original. Schmid, H. Ernst. White Plains.
 Small, John W. Yonkers.
 Original. Southworth, Richmond Joseph. Washington, D. C.
 Original. Wells, William L. New Rochelle.

11

SUMMARY OF FELLOWSHIP BY DISTRICTS.

First District	.	.	.	.	.	.	.	.	.	81
Second District	.	.	.	.	.	.	.	.	.	127
Third District	.	.	.	.	.	.	.	.	.	122
Fourth District	.	.	.	.	.	.	.	.	.	156
Fifth District	.	.	.	.	.	.	.	.	.	295
Non-resident	.	.	.	.	.	.	.	.	.	9
Total Fellowship	.	.	.	.	.	.	.	.	.	790

*Deceased.

ALPHABETICAL LIST OF FELLOWS.

- Aberdein, Robert, Warren and Fayette Sts., Syracuse, Onondaga Co. Original.
- Abrams, H. C., Newtonville, Albany Co.
- Acker, Thomas J., Croton-on-Hudson, Westchester Co.
- Adams, Calvin Thayer, 21 E. 28th St., New York, New York Co.
- Agramonte, Aristides, 144 W. 79th St., New York, New York Co.
- Agramonte, E. V., 152 W. 82d St., New York, New York Co.
- Alexander, Samuel, 5 W. 58th St., New York, New York Co.
- Alleman, L. A. W., 64 Montague St., Brooklyn, Kings Co.
- Allen, Amos, Grafton, Rensselaer Co. Original.
- Allen, Charles S., Rensselaer, Rensselaer Co. Founder.
- Allen, Henry J., Corinth, Saratoga Co.
- Allen, S. Busby, 1,364 Lexington Ave., New York, New York Co.
- Allen, S. P., Whitney's Point, Broome Co.
- Allen, Thomas H., 52 W. 45th St., New York, New York Co.
- Allen, William L., Rensselaer, Rensselaer Co.
- Ames, Edward, 123 E. Lovell St., Kalamazoo, Mich. Founder.
- Anderson, R. Harcourt, 108 W. 40th St., New York, New York Co.
- Andrews, Charles H., Holland, Erie Co.
- Andrews, John L., 307 E. 86th St., New York, New York Co.
- Andrews, Lewis B., Byron, Genessee Co.
- Arcularius, Lewis, 121 E. 25th St., New York, New York Co. Original.
- Armstrong, James A., Clinton, Oneida Co.
- Arnold, Edmund S. F., Carroll Avenue, Newport, R. I. Original.
- Arnold, Glover C., 115 E. 30th St., New York, New York Co.
- Arnold, J. Newton, Clyde, Wayne Co. Founder.
- Atwood, H. L., Collins Center, Erie Co. Original.
- Atwood, John W., Fishkill-on-Hudson, Dutchess Co.
- Ayer, W. L., Owego, Tioga Co. Original.
- Ayres, Douglas, Fort Plain, Montgomery Co. Original.
- Backus, Ogden, 67 S. Fitzhugh St., Rochester, Monroe Co. Original.
- Bacon, Charles G., Fulton, Oswego Co. (Retired list.)

- Bagg, Moses M., Utica, Oneida Co. Original. (Retired list.)
Bailey, Theodore P., 95 Eagle St., Albany, Albany Co. Founder.
Bailey, William C., Knoxville, Tenn. Original.
Baker, Benjamin N., Rhinebeck, Dutchess Co.
Baker, Frank R., 540 Bedford Ave., Brooklyn, E. D., Kings Co.
Baker, George W., 540 Bedford Ave., Brooklyn, E. D., Kings Co. Founder.
Baldwin, F. A., 129 W. 77th St., New York, New York Co.
Banks, George B., Hartsdale, Westchester Co. Original. (Retired list.)
Barnes, Edwin, Pleasant Plains, Dutchess Co. Original.
Barney, Charles S., Milford, Otsego Co. Original.
Barnum, D. Albert, Cassville, Oneida Co.
Bartlett, Fred W., 523 Delaware Ave., Buffalo, Erie Co. Original.
Barton, Lyman, Willsborough, Essex Co. Founder. (Retired list.)
Barton, L. G., Willsborough, Essex Co.
Barton, Thomas J., Tivoli, Dutchess Co.
Bates, Nelson W., Central Square, Oswego Co. (Retired list.)
Bates, Xyris T., Poughkeepsie, Dutchess Co. Original.
Bayley, Guy Carleton, Poughkeepsie, Dutchess Co. Original.
Baynes, Joseph E., 2,419 5th Ave., Troy, Rensselaer Co.
Beardsley, William E., 101 Taylor St., Brooklyn, Kings Co.
Beers, John E., Danby, Tompkins Co. Founder.
Bellows, George A., Waterloo, Seneca Co.
Bemus, Morris N., Jamestown, Chautauqua Co.
Bemus, William Marvin, Jamestown, Chautauqua Co.
Benham, John C., Hudson, Columbia Co. Original.
Benedict, Arthur L., 174 Franklin St., Buffalo, Erie Co.
Bennett, Arthur G., 213 Franklin St., Buffalo, Erie Co.
Bentley, F. R., Cheshire, Ontario Co. Original. (Retired list.)
Bergtold, W. H., 56 Allen St., Buffalo, Erie Co.
Birmingham, Edward J., 8 E. 47th St., New York, New York Co.
Bierwith, Julius C., 137 Montague St., Brooklyn, Kings Co.
Biggam, William H., Jr., 1,095 Dean St., Brooklyn, Kings Co. Original.
Biggs, Chauncey P., Ithaca, Tompkins Co.
Biggs, H. M., 5 W. 58th St., New York, New York Co. Original.
Birdsall, Gilbert, North Brookfield, Madison Co. Original.
Bissell, James H., 2,187 5th Ave., Troy, Rensselaer Co.
Blaine, Myron D., Willard, Seneca Co.
Blair, Louis P., McDonough, Chenango Co. Original.

- Blake, Clarence R., Northville, Fulton Co. Original.
- Blanchard, R. N., Jamestown, Chautauqua Co.
- Blumer, G. Alder, State Hospital, Utica, Oneida Co. Original.
- Boies, Loren F., 286 Howard Ave., Buffalo, Erie Co. Original.
- Bond, G. F. M., State Hospital, Utica, Oneida Co.
- Bonesteel, H. F., Mill St., Troy, Rensselaer Co.
- Bonesteel, William N., Mill St., Troy, Rensselaer Co. Founder.
(Retired list.)
- Bontecou, Reed B., 82 4th St., Troy, Rensselaer Co. Original.
- Booth, Wilbur H., 172 Genesee St., Utica, Oneida Co. Original.
- Boyce, Elias B., Averill Park, Rensselaer Co.
- Bozeman, Nathan, 140 Madison Ave., New York, New York Co.
Founder.
- Bozeman, Nathan G., 9 W. 31st St., New York, New York Co.
- Bradford, George D., Homer, Cortland Co.
- Bradley, O. Howard, Hudson, Columbia Co.
- Brandt, J. S., Ontario Center, Wayne Co.
- Briggs, Albert H., 267 Hudson St., Buffalo, Erie Co. Original.
- Briggs, William H., Hemlock Lake, Livingston Co. Original.
- Brodrick, William P., 164 W. 121st St., New York, New York Co.
- Brooks, Leroy J., Norwich, Chenango Co. Original.
- Brown, Chas. W., 902 14th St., N. W., Washington, D. C. Original.
nal.
- Brown, George L., D. S. Morgan Building, Buffalo, Erie Co.
- Brown, J. P., Nunda, Livingston Co.
- Brown, Ulysses H., 312 Warren St., Syracuse, Onondaga Co.
- Brundage, A. H., 609 Madison St., Brooklyn, Kings Co. Original.
nal. (Retired list.)
- Brush, Edward F., Mount Vernon, Westchester Co. Original.
- Brush, Edward N., Shepperd Asylum, Towsen, Md. Original.
- Bryant, J. D., 54 W. 36th St., New York, New York Co. Original.
- Bryant, Percy, Manhattan State Hospital, Ward's Island, New York, New York Co.
- Buckley, James, 127 E. Main St., Rochester, Monroe Co. Original.
nal.
- Bull, Charles Stedman, 47 W. 36th St., New York, New York Co.
Original.
- Bull, William T., 35 W. 35th St., New York, New York Co.
- Bullard, T. E., Schuylerville, Saratoga Co.
- Burbeck, Chas. H., 91 First St., Troy, Rensselaer Co. Founder.
- Burghardt, Francis Augustus, 632 Elm St., Buffalo, Erie Co.
- Burhyte, O. W., Brookfield, Madison Co.

- Burke, John J. A., 65 East Ave., Rochester, Monroe Co. Original.
- Burns, William J., Sea Cliff, Queens Co. Original.
- Burton, Henry B., 75 4th St., Troy, Rensselaer Co.
- Buswell, Henry C., 868 Main St., Buffalo, Erie Co.
- Cady, George M., Nichols, Tioga Co.
- Cahill, John T., Hoosick Falls, Rensselaer Co.
- Caldwell, Nathan A., Hageman's Mills, Montgomery Co.
- Campbell, A. J., 332 Warren St., Syracuse, Onondaga Co.
- Campbell, Clarence G., 68 W. 35th St., New York, New York Co.
- Carpenter, Henry W., Oneida, Madison Co. Original.
- Carr, William, 35 W. 46th St., New York, New York Co.
- Carter, H. S., 130 E. 24th St., New York, New York Co. Original.
- Casey, J. E., Mohawk, Herkimer Co.
- Cavana, Martin, Oneida, Madison Co.
- Chambers, Jacob, Kingston, Ulster Co. Original.
- Chambers, Martin L., Port Jefferson, Suffolk Co. Original.
- Chapman, James, Medina, Orleans Co. Founder.
- Chauveau, Jean F., 31 W. 60th St., New York, New York Co. Original.
- Chittenden, Daniel J., Addison, Steuben Co.
- Chittenden, Joseph H., Binghamton, Broome Co. Founder.
- Chrystie, T. M. Ludlow, 216 W. 46th St., New York, New York Co. Original.
- Church, B. A., Oneonta, Otsego Co.
- Church, George T., Saratoga, Saratoga Co.
- Church, Thomas C., Valley Falls, Rensselaer Co.
- Churchill, Alonzo, 189 Genesee St., Utica, Oneida Co. (Retired list.)
- Clark, Dewitt C., Marathon, Cortland Co. Original.
- Clark, George W., Waterloo, Seneca Co.
- Clark, Wallace, 136 Park Ave., Utica, Oneida Co.
- Clendanan, C. W., N. Tonawanda, Erie Co.
- Clum, Franklin D., Cheviot, Columbia Co.
- Codding, George H., Amenia, Dutchess Co. Founder.
- Coffin, Lawrence, 473 Bedford Ave., Brooklyn, Kings Co.
- Cohen, Bernard, 497 Niagara St., Buffalo, Erie Co.
- Coley, William B., 52 W. 35th St., New York, New York Co.
- Collins, Stacy B., Seaford, Sussex Co., Del.
- Colvin, Darwin, Clyde, Wayne Co. Founder.
- Comfort, John E., 1315 Franklin Ave., New York, New York Co.
- Comstock, George F., Saratoga Springs, Saratoga Co. Founder.
- Conderman, George, Hornellsville, Steuben Co.

Congdon, Charles E., 1034 Jefferson St., Buffalo, Erie Co.

Conkling, George, Durham, Greene Co. Original.

Conner, Milton C., Middletown, Orange Co.

Conover, William S., 237 W. 132d St., New York, New York Co.
Founder.

Conway, John Francis, cor. Buffalo Ave. and Union St., Brooklyn, Kings Co. Original.

Conway, John R., 130 Lexington Ave., New York, New York Co.

Cook, Guy Reuben, Louisville, St. Lawrence Co.

Cooke, Almon H., 410 Ashland Ave., Buffalo, Erie Co.

Cooley, F. L., 210 First St., Oswego, Oswego Co.

Cooley, R. N., Hannibal Centre, Oswego Co.

Cooper, William C., 81 3d St., Troy, Rensselaer Co. Original.

*Copley, Heman D., Bainbridge, Chenango Co.

Cott, George F., 433 W. Huron St., Buffalo, Erie Co.

Coutant, Richard B., Tarrytown, Westchester Co. Original.

Cramer, William, 136 Mansion St., Poughkeepsie, Dutchess Co.
Founder.

Crane, Frank W., Corfu, Genesee Co. Original.

Crawe, J. Mortimer, Watertown, Jefferson Co. Founder.

Creamer, Joseph, Jr., 168 N. 6th St., Brooklyn, E. D., Kings Co.

Criado, Louis F., 147 Fort Green Place, Brooklyn, Kings Co.

Crocker, Edwin, Narrowsburg, Sullivan Co.

Crombie, Walter C., Mechanicsville, Saratoga Co. Original.

Cronyn, John, 55 W. Swan St., Buffalo, Erie Co. Founder.

Crosby, Alexander H., Lowville, Lewis Co.

Crounse, Andrew C., Melrose, Rensselaer Co.

Curry, Walker, 21 E. 61st St., New York, New York Co. Original.

Curtis, Daniel, Jeddo, Orleans Co.

Curtis, D. F., 102 South Ave., Rochester, Monroe Co.

Curtis, P. C., Round Lake, Saratoga Co.

*Dagenais, Alphonse, 473 W. Virginia St., Buffalo, Erie Co. Original.

Dallas, Alexander, 22 E. 22d St., New York, New York Co.

Dallas, Alexander J., 48 Warren St., Syracuse, Onondaga Co.
Founder.

Dalton, W. R. I., 477 W. 145th St., New York, New York Co.

Daniels, Clayton M., 868 Main St., Buffalo, Erie Co. Original.

D'Avignon, Francis J., Au Sable Forks, Essex Co. Original.

Davis, J. Griffith, 200 W. 14th St., New York, New York Co.

Davis, J. O., Howells, Orange Co.

Davis, Robert C., 150 E. 128th St., New York, New York Co.

- Dayton, C. L., 246 Dearborn St., Buffalo, Erie Co. (Retired list).
Dean, Harmon J., Brocton, Chautauqua Co. Founder.
DeGarmo, W. B., 56 W. 36th St., New York, New York Co.
DeKay, William H., Parksville, Sullivan Co.
De Landeta, J. B., 228 W. 44th St., New York, New York Co.
DeLaney, John Pope, Geneva, Ontario Co.
Delphey, Eden V., 353 W. 57th St., New York, New York Co.
Dench, Edward B., 17 W. 46th St., New York, New York Co.
Denison, Charles Ellery, 113 W. 12th St., New York, New York Co.
Original.
Denison, Ellery, 113 W. 12th St., New York, New York Co.
Original.
Dennis, Frederick S., 542 Madison Ave., New York, New York Co.
Founder.
De Witt, Byron, Oswego, Oswego Co. Original.
Dickinson, M. D., Troy, Rensselaer Co.
Dickson, Thomas Gordon, Troy, Rensselaer Co.
Didama, Emory A., Cortland, Cortland Co.
Didama, Henry D., 112 S. Salina St., Syracuse, Onondaga Co.
Founder.
Dodge, Amos P., Oneida Castle, Oneida Co.
Dodge, Frank B., Mount Morris, Livingston Co.
Dodge, Lyndehurst C., Rouse's Point, Clinton Co. Founder.
Donohue, Florince O., 410 Warren St., Syracuse, Onondaga Co.
Original.
Dorland, Elias T., 388 Elmwood Ave., Buffalo, Erie Co. Original.
Douglas, Edgar H., Little Falls, Herkimer Co.
Douglas, George, Oxford, Chenango Co.
Douglass, A. J., Ilion, Herkimer Co.
Douglass, Charles E., Lowville, Lewis Co.
Douglass, James W., Booneville, Oneida Co.
Drake, D. Delos, Johnstown, Fulton Co.
Drake, E. G., 312 W. Church St., Elmira, Chemung Co.
Drake, Frank C., Oneida, Madison Co.
Drake, James B., Hancock, Delaware Co.
Drake, W. F., 101 W. 84th St., New York, New York Co.
Du Bois, Matthew B., 37 E. 39th St., New York, New York Co.
Original.
Dudley, A. Palmer, 678 Madison Ave., New York, New York Co.
Dudley, Dwight, Maine, Broome Co.
Dunham, Edward K., 338 E. 26th St., New York, New York Co.
Dunlop, John J., Waterford, Saratoga Co. Original.

- Dunn, Jeremiah, Bath, Steuben Co. Original.
- Dunning, J. D., Webster, Monroe Co. Original.
- Earle, George W., Tully, Onondaga Co.
- Eastman, L. O., Union, Broome Co.
- Eastman, Robert W., 140 W. 76th St., New York, New York Co. Original.
- Eddy, George P., Lewiston, Niagara Co.
- Eddy, John L., Olean, Cattaraugus Co.
- Edwards, Amos S., 1506 N. Salina St., Syracuse, Onondaga Co. Original.
- Edwards, George A., Catherine and Lodi Sts., Syracuse, Onondaga Co. Original.
- Edwards, John, Gloversville, Fulton Co.
- Einhorn, Max, 20 E. 63d St., New York, New York Co.
- Eldridge, Stuart, Yokohama, Japan. (Non-resident.)
- Eliot, Ellsworth, 48 W. 36th St., New York, New York Co. Original.
- Ellinwood, A. G., Attica, Wyoming Co. Original.
- Ellis, J. B., Whitesborough, Oneida Co.
- Ellison, Metler D., Canisteo, Steuben Co. Original.
- Ellsworth, Victor A., 41 Waltham St., Boston, Mass.
- Ely, Henry Oliver, Binghamton, Broome Co. Original.
- Enders, Thomas Burnham, Highland St., Hartford, Conn.
- English, G. P., Booneville, Oneida Co.
- Erdmann, John F., 144 W. 44th St., New York, New York Co.
- Essig, George, 488 Bedford Ave., Brooklyn, Kings Co.
- Farnham, LeRoy D., Binghamton, Broome Co.
- Farrington, John M., Binghamton, Broome Co.
- Farrington, Joseph O., 1991 Madison Ave., New York, New York Co.
- Feeley, James F., 296 Lorimer St., Brooklyn, E. D., Kings Co.
- Fenno, Henry Marshall, 77 W. Main St., Rochester, Monroe Co.
- Ferguson, E. D., 1 Union Place, Troy, Rensselaer Co. Founder.
- Ferguson, Frank, 20 W. 38th St., New York, New York Co.
- Fielding, F. G., Glens Falls, Warren Co.
- Finder, William, Jr., 2 Union Place, Troy, Rensselaer Co. Founder.
- Fischer, J. C., Elmira, Chemung Co.
- Fitzgerald, David J., Glens Falls, Warren Co.
- Fitzgerald, John F., State Custodial Asylum, Rome, Oneida Co.
- Flanigan, John R., Syracuse, Onondaga Co.
- Fletcher, Charles L., Wing's Station, Dutchess Co. Original.
- Flickinger, John, Trumansburg, Tompkins Co.
- Flint, Austin, 60 E. 34th St., New York, New York Co. Founder.
- Flint, Austin, Jr., 18 E. 45th St., New York, New York Co.

- Flint, William H., Ridgefield, Conn. Founder. (Retired list.)
Fordyce, John A., 66 Park Ave., New York, New York Co.
Forker, Frederick L., Binghamton, Broome Co.
Foster, George V., 109 E. 18th St., New York, New York Co.
Fowler, Joseph, 31 Church St., Buffalo, Erie Co.
Frankenberg, Jacob H., 142 E. 74th St., New York, New York Co.
Fraser, Jefferson C., Ava, Oneida Co.
Frederick, Carlton C., 64 Richmond Ave., Buffalo, Erie Co.
French, S. H., Amsterdam, Montgomery Co.
Fridenberg, Edward, 242 Lenox Ave., New York, New York Co.
Fritts, Crawford Ellsworth, Hudson, Columbia Co.
Fuller, Earl D., 66 Varick St., Utica, Oneida Co.
Garlock, William D., Little Falls, Herkimer Co.
Getty, A. H., Athens, Greene Co.
Gibson, William M., 187 Genesee St., Utica, Oneida Co.
Gilbert, Horatio, Hornellsville, Steuben Co.
Gleitsmann, J. W., 46 E. 25th St., New York, New York Co.
Glidden, Charles H., Little Falls, Herkimer Co. Original.
Goler, George W., 127 East Ave., Rochester, Monroe Co.
Gould, Cassius W., 1428 Main St., Buffalo, Erie Co.
Gouley, J. W. S., 11 E. 43d St., New York, New York Co. Founder.
Gow, Frank F., Schuylerville, Saratoga Co.
Granger, William D., Bronxville (Vernon House), Westchester Co.
Grant, Charles S., Saratoga Springs, Saratoga Co. Founder.
Grauer, Frank, 326 W. 46th St., New York, New York Co.
Gravatt, Edwin J., 361 Second St., Troy, Rensselaer Co.
Gray, Joseph F., 354 W. 29th St., New York, New York Co.
Green, H. H., Paine's Hollow, Herkimer Co.
Green, Stephen S., 426 Niagara St., Buffalo, Erie Co.
Greene, Clark W., Binghamton, Broome Co.
Greene, Cordelia A., Castile, Wyoming Co.
Greene, DeWitt C., 1125 Main St., Buffalo, Erie Co. Original.
Greene, Joseph C., 124 Swan St., Buffalo, Erie Co. Founder.
Greene, Walter D., 444 Elk St., Buffalo, Erie Co. Original.
Greenman, C. E., 179 1st St., Troy, Rensselaer Co.
Gulick, A. Reading, 30 W. 36th St., New York, New York Co.
Gulick, Charlton R., 30 W. 36th St., New York, New York Co.
Guy, J. D., Chenango Forks, Broome Co.
Hagadorn, William, Gilboa, Schoharie Co. Original.
Hagey, J. M., Mount Morris, Livingston Co.
Halbert, M. L., Cincinnatus, Cortland Co.
Hall, William H., Saratoga Springs, Saratoga Co. Original.

Hamill, Edward H., 302 6th Ave., Newark, N. J.

*Hammer, Charles, Schenectady, Schenectady Co.

Hammond, Frederick P., 143 E. 117th St., New York, New York Co.

Hand, S. M., Norwich, Chenango Co.

Hannan, James C., Hoosick Falls, Rensselaer Co. Founder.

Hannan, Thomas H., Hoosick Falls, Rensselaer Co.

Harrington, D. W., 1430 Main St., Buffalo, Erie Co. Original.

Harris, E. Eliot, 33 W. 93d St., New York, New York Co.

Harrison, George Tucker, 221 W. 23d St., New York, New York Co..

Original.

Harvie, J. B., 6 Clinton Place, Troy, Rensselaer Co. Founder.

Hatch, C. A., 10 E. Onondaga St., Syracuse, Onondaga Co.

Original.

Haubold, H. A., 140 E. 72d St., New York, New York Co.

Hayd, Herman E., 493 Delaware Ave., Buffalo, Erie Co.

Hayes, Philetus A., Afton, Chenango Co.

Hayes, William E., Frankfort, Herkimer Co.

Haynes, John U., 103 Mohawk St., Cohoes, Albany Co.

Head, Adelbert D., 202 E. Genesee St., Syracuse, Onondaga Co.

Founder.

Heath, William H., 415 Pearl St., Buffalo, Erie Co.

Heimstreet, Thomas B., 14 Division St., Troy, Rensselaer Co.

Original.

Hendrick, Henry C., McGrawville, Cortland Co. Founder.

Henning, Thomas I., Glens Falls, Warren Co.

Hepburn, Neil J., 369 W. 23d St., New York, New York Co.

Hicks, Edward E., 923 Jefferson Ave., Brooklyn, Kings Co.

Hicks, W. Scott, Bristol, Ontario Co. Original.

Higgins, F. W., Cortland, Cortland Co.

Hillis, Thomas J., 51 Charlton St., New York, New York Co.

Hills, Lyman H., Binghamton, Broome Co. Original.

Himmelsbach, George A., 30 12th St., Buffalo, Erie Co.

Hinton, John H., 41 W. 32d St., New York, New York Co.

Founder.

Hodgman, Abbott, 141 E. 38th St., New York, New York Co.

Founder.

Hodgman, William H., 108 Caroline St., Saratoga Springs, Saratoga Co. Founder.

Holcomb, O. A., Plattsburgh, Clinton Co.

Holden, Arthur L., 116 South St., Utica, Oneida Co.

HoornBeek, Philip Du Bois, Warwarsing, Ulster Co. Original.

(Retired list.)

* Deceased.

- Horton, David B., Red Creek, Wayne Co.
 Hough, F. P., Binghamton, Broome Co.
 Houston, David W., 44 2d St., Troy, Rensselaer Co. Original.
 Hovey, B. L., 34 N. Fitzhugh St., Rochester, Monroe Co.
 Founder.
 Howard, Charles F., 1,458 Main St., Buffalo, Erie Co.
 Howland, George T., 825 Vermont Avenue, Washington, D. C.
 Hoyer, F. F., Tonawanda, Erie Co. Founder.
 Hubbard, Chauncey G., Hornellsville, Steuben Co.
 Hubbard, Dwight L., 117 W. 93d St., New York, New York Co.
 Hubbell, Alvin A., 212 Franklin St., Buffalo, Erie Co.
 Hudson, George, Stillwater, Saratoga Co.
 Huestis, W. B., Flatbush Ave., cor. Hubbard Place, Brooklyn,
 Kings Co.
 Huggins, William Q., Sanborn, Niagara Co.
 *Hughes, Henry R., Clinton, Oneida Co.
 Hughes, Peter, 275 Berry St., Brooklyn, Kings Co.
 Hulette, G. S., Arcade, Wyoming Co.
 *Hühne, August, Rondout, Ulster Co. Founder. (Retired list.)
 Hühne, Frederic, Rondout, Ulster Co. Original.
 Hull, Thomas H., 55 Lee Ave., Brooklyn, Kings Co.
 Hulse, William A., Bay Shore, Suffolk Co.
 Humphrey, J. F., Saratoga Springs, Saratoga Co.
 Hunt, H. L., Orchard Park, Erie Co.
 Hunt, James G., 5 Gardner Block, Utica, Oneida Co. Original.
 Hunt, W. J., Glens Falls, Warren Co.
 Hunter, Nathaniel P., Jasper, Steuben Co.
 *Huntington, Henry K., New Rochelle, Westchester Co. Original.
 nal.
 Huntington, John W., Mexico, Oswego Co.
 Huntley, James F., Oneida, Madison Co.
 Hutton, M. B., Valley Falls, Rensselaer Co.
 *Ilgen, Ernst, 369 Herkimer St., Brooklyn, Kings Co. Original.
 (Retired list.)
 Ingraham, Henry D., 405 Franklin St., Buffalo, Erie Co.
 Ingraham, Samuel, Palmyra, Wayne Co. Original. (Retired list.)
 Inlay, Erwin G., Saratoga Springs, Saratoga Co.
 Jackson, Albert P., Oakfield, Genesee Co. Founder.
 Jackson, Charles W., 130 W. 81st St., New York, New York Co.
 Jackson, William H., Springville, Erie Co.
 Jacobson, Nathan, 430 S. Salina St., Syracuse, Onondaga Co.
 Original.

*Deceased.

- Jamison, John S., Hornellsville, Steuben Co. Original.
- Janeway, Edward G., 36 W. 40th St., New York, New York Co.
Founder.
- Janvrin, J. E., 191 Madison Ave., New York, New York Co.
- Jenkins, John A., 271 Jefferson Ave., Brooklyn, E. D., Kings Co.
Original.
- Jenkins, William T., 109 E. 26th St., New York, New York Co.
- Jewett, F. A., 282 Hancock St., Brooklyn, Kings Co.
- Jewett, Homer O., Cortland, Cortland Co. Founder.
- Johnson, George P., Mexico, Oswego Co.
- Johnson, Henry W., Hudson, Columbia Co.
- Johnson, Ianthus G., Greenfield Center, Saratoga Co. Original.
- Johnson, Leonard M., Greene, Chenango Co. Original.
- Johnson, Parley H., Adams, Jefferson Co. Original.
- Johnson, Richard G., Amsterdam, Montgomery Co. Original.
- Johnson, Thomas M., 418 Main St., Buffalo, Erie county. Original.
- Johnston, Henry C., New Brighton, Richmond Co.
- Jones, Allen A., 436 Franklin St., Buffalo, Erie Co.
- Jones, George H., Fowlerville, Livingston Co.
- Jones, S. Case, 21 East Ave., Rochester, Monroe Co.
- Joslin, Albert A., Martinsburgh, Lewis Co.
- Judson, A. B., 25 Madison Ave., New York, New York Co.
- Julian, John M., Pleasant Valley, Dutchess Co.
- Kalish, Richard, 36 W. 47th St., New York, New York Co.
- Keefer, Charles W., Mechanicsville, Saratoga Co.
- Keith, Halbert Lyon, Upton, Mass.
- Kelley, John Devin, Lowville, Lewis Co.
- Kelley, Thomas, 357 W. 57th St., New York, New York Co.
- Kemp, William M., 267 W. 23d St., New York, New York Co.
- Kenyon, Benjamin, Cincinnatus, Cortland Co.
- Kenyon, Frank, Scipio, Cayuga Co.
- Kenyon, M., King's Ferry, Cayuga Co. Original.
- Killen, Jack, Binghamton, Broome Co.
- King, Ferdinand, 149 W. 66th St., New York, New York Co.
- King, James K., Watkins, Schuyler Co.
- Kingsley, Henry F., Schoharie, Schoharie Co. Original.
- Klock, Charles M., St. Johnsville, Montgomery Co.
- Knapp, W. H., Binghamton, Broome Co.
- Kneeland, B. T., Dalton, Livingston Co.
- Kneeland, Jonathan S., Onondaga, Onondaga Co. Founder.
(Retired list.)

- Kneer, F. G., 236 W. 51st St., New York, New York Co.
Knipe, George, 353 W. 24th St., New York, New York Co.
Kniskern, A. C., Mechanicsville, Saratoga Co.
Kuhn, William, Rome, Oneida Co.
LaBell, Martin J., Lewis, Essex Co. Original.
Laird, William R., 98 Wall St., Auburn, Cayuga Co. Original.
Lake, Albert D., Gowanda, Cattaraugus Co.
Lambert, John, Salem, Washington Co.
Landon, Newell E., Newark, Wayne Co. Original.
Lapp, Henry, Clarence, Erie Co.
Leach, H. M., Charlton City, Mass. Original.
Leale, Charles A., 604 Madison Ave., New York, New York Co.
 Founder.
Leaning, John K., Cooperstown, Otsego Co. Founder.
Leffingwell, E. D., Watkins, Schuyler Co.
Leighton, N. W., 143 Taylor St., Brooklyn, E. D., Kings Co.
 Original.
LeRoy, Irving D., Pleasant Valley, Dutchess Co. Founder.
Lester, Elias, Seneca Falls, Seneca Co. Founder.
Lewis, LeRoy, Auburn, Cayuga Co.
Lewis, Robert, 14 E. 45th St., New York, New York Co.
Lichtschein, Louis, 653 Lexington Ave., New York, New York Co.
Lindsay, Walter, Huntington, Suffolk Co. Original.
Little, Albert H., 349 W. 23d St., New York, New York Co.
Little, Frank, 114 Montague St., Brooklyn, Kings Co.
Lloyd, T. Mortimer, 125 Pierrepont St., Brooklyn, Kings Co.
 Original.
Lockwood, Charles E., 34 W. 38th St., New York, New York Co.
Lockwood, J. W., Philmont, Columbia Co. Original.
*Long, Alfred J., Whitehall, Washington Co.
Long, Ben G., 1,408 Main St., Buffalo, Erie Co.
Ludlow, Ogden C., 2309 7th Ave., New York, New York Co.
Lukens, Anna, 1068 Lexington Ave., New York, New York Co.
Lusk, William C., 47 E. 34th St., New York, New York Co.
*Lusk, William T., 47 E. 34th St., New York, New York Co.
 Founder.
Lusk, Zera J., Warsaw, Wyoming Co.
Lyman, H. C., Sherburne, Chenango Co. Original.
Lynch, Patrick J., 216 E. 13th St., New York, New York Co.
Lyon, E. M., Plattsburgh, Clinton Co. Founder.
Lyon, George E., Planter's Hotel, St. Louis, Mo. Original.
Lyons, Edward L., 298 4th St., Troy, Rensselaer Co.
 *Deceased.

- Lyons, G. A., New Rochelle, Westchester Co. Original.
- Macfarlane, William A., Springville, Erie Co.
- MacGregor, James R., 1118 Madison Ave., New York, New York Co.
- Mackenzie, J. C., 432 W. 22d St., New York, New York Co.
- MacLaren, William Stevenson, Litchfield, Conn. (Non-resident.)
- Maclean, Donald, 72 Lafayette Ave., Detroit, Mich. (Non-resident.)
- *Magee, Charles M., 800 South West St., Syracuse, Onondaga Co.
- *Magee, Daniel, 608 Federal St., Troy, Rensselaer Co. Original.
- Maher, J. J. E., 34 W. 25th St., New York, New York Co.
- Maine, Alvah P., Webster, Monroe Co.
- Manley, Thomas H., 115 W. 49th St., New York, New York Co.
- Founder.
- Mann, Carl C., Warsaw, Wyoming Co.
- Marsden, W. R., 175 Columbia St., Utica, Oneida Co.
- Marsh, E. Frank, Fulton, Oswego Co.
- Marsh, James P., 1739 5th Ave., Troy, Rensselaer Co.
- Marshall, Francis F., 56 W. 56th St., New York, New York Co.
- Martin, John H., Otego, Otsego Co. Original.
- Martindale, F. E., Port Richmond, Richmond Co.
- Martine, Godfrey R., Glens Falls, Warren Co. Original.
- McAlpin, D. Hunter, Jr., 9 E. 55 St., New York, New York Co.
- McBurney, Charles, 28 W. 37th St., New York, New York Co.
- McCullom, William, 195 Lefferts Place, Brooklyn, Kings Co.
- Original.
- McDaniel, Alfred C., San Antonio, Texas. (Non-resident.)
- McDonald, George E., Schenectady, Schenectady Co. Original.
- McDougall, R. A., Duaneburg, Schenectady Co.
- McDougall, William D., Spencerport, Monroe Co. (San Jose, Cal.)
- McGann, Thomas, Wells, Hamilton Co.
- McGauran, George D., 422 W. 51st St., New York, New York Co.
- McGillicuddy, T. J., 776 Madison Ave., New York, New York Co.
- McGowen, John P., 109 E. 28th St., New York, New York Co.
- McIlroy, Samuel H., 330 Alexander Ave., New York, New York Co.
- McLeod, Johnston, 329 W. 23d St., New York, New York Co.
- McLeod, S. B. Wylie, 329 W. 23d St., New York, New York Co.
- Founder.
- McLochlin, James A., 157 W. 21st St., New York, New York Co.
- Original.
- McNamara, Daniel, 243 W. Genesee St., Syracuse, Onondaga Co.
- Original.
- *McNamara, Laurence J., 126 Washington Place (West), New York, New York Co. Original.

*Deceased.

- McNicholl, Thomas A., 321 E. 50th St., New York, New York Co.
McWilliams, F. A., Monticello, Sullivan Co.
Meacham, Isaac D., Binghamton, Broome Co.
Meier, Gottlieb C. H., 126 E. 58th St., New York, New York Co.
Menzie, R. J., Caledonia, Livingston Co. Original.
Meyer, George L., Stone Arabia, Montgomery Co.
Michael, F. M., Binghamton, Broome Co.
Milbury, Frank S., 215 Jefferson Ave., Brooklyn, Kings Co.
Miles, George W., Oneida, Madison Co.
Miller, William T., 310 W. 27th St., New York, New York Co.
Original.
Milliken, S. E., 640 Madison Ave., New York, New York Co.
Minard, E. J. Chapin, 243 Quincy St., Brooklyn, Kings Co.
Original.
Miranda, Ramon L., 116 W. 64th St., New York, New York Co.
Original.
Montgomery, J. J., Luzerne, Warren Co.
Montmarquet, J. D., Cohoes, Albany Co.
Moore, Allan N., Lockport, Niagara Co.
Moore, Edward M., 74 S. Fitzhugh St., Rochester, Monroe Co.
Founder. (Retired list.)
Moore, Edward M., Jr., S. 74 Fitzhugh St., Rochester, Monroe Co.
Original.
Moore, Macdonald, Fredonia, Chautauqua Co.
Moore, Richard Mott, 74 S. Fitzhugh St., Rochester, Monroe Co.
Original.
Moore, William A., Binghamton, Broome Co.
Moran, James, 352 W. 51st St., New York, New York Co.
Morehouse, E. W., 199 2d St., Troy, Rensselaer Co.
Moriarta, Douglas C., Saratoga Springs, Saratoga Co.
Morrow, William B., Walton, Delaware Co.
Mott, Valentine, 62 Madison Ave., New York, New York Co.
Moyer, Frank H., Moscow, Livingston Co. Original.
Mudge, Selden J., Olean, Cattaraugus Co.
Muir, William Scott, Truro, Nova Scotia. (Non-resident.)
Mulford, Henry J., 466 Franklin St., Buffalo, Erie Co.
Munger, Charles, Knoxborough, Oneida Co.
Munson, J. A., Woodbourne, Sullivan Co. Original.
Munson, W. W., Otisco, Onondaga Co. Original.
Murdock, George W., Cold Spring, Putnam Co. Founder.
Murphy, John, 233 E. 35th St., New York, New York Co. Original.
Murray, Byron J., Saratoga Springs, Saratoga Co. Original.

- Murray, S. J., 133 W. 87th St., New York, New York Co. Original.
- Murray, William D., Tonawanda, Erie Co. Original.
- Nelson, William H., Taberg, Oneida Co.
- Newman, George W., 234 Leonard St., Brooklyn, Kings Co.
- Newman, Robert, 64 W. 36th St., New York, New York Co. Original.
- Nichols, Calvin E., 25 1st St., Troy, Rensselaer Co. Founder.
- Nichols, William H., West Sand Lake, Rensselaer Co. Founder.
- Nicholson, A. R., Madison, Madison Co. Original.
- Nicoll, Henry D., 51 E. 57th St., New York, New York Co. Founder.
- Nold, John B., Utica, Oneida Co. (Retired list.)
- North, Nelson L., 627 Bedford Ave., Brooklyn, Kings Co. Original.
- Noyes, James B., New Berlin, Chenango Co.
- Nutten, Wilbur F., Newark, Wayne Co.
- Obendorfer, Isador P., 1037 Lexington Ave., New York, New York Co. Original.
- O'Brien, Frederick Wm., 244 Lenox Ave., New York, New York Co.
- O'Brien, M. Christopher, 161 W. 122d St., New York, New York Co.
- Ochs, Benjamin F., 120 W. 120th St., New York, New York Co.
- O'Hare, Thomas A., 157 State St., Rochester, Monroe Co. Original.
- Oliver, William, Penn Yan, Yates Co.
- Oppenheimer, H. S., 49 E. 23d St., New York, New York Co.
- Oppenheimer, S., 55 E. 65th St. (The Palacio), New York, New York Co.
- Orton, John G., Binghamton, Broome Co. Founder.
- Ostrander, George A., 61 Greene Ave., Brooklyn, Kings Co.
- Packer, Thurston G., Smyrna, Chenango Co.
- Page, Emmett D., 297 De Kalb Ave., Brooklyn, Kings Co.
- Paine, Arthur R., 99 Lafayette Ave., Brooklyn, Kings Co. Original.
- Palmer, Edmund J., 1342 Lexington Ave., New York, New York Co.
- Palmer, F. A., Mechanicsville, Saratoga Co.
- Palmer, George M., Warsaw, Wyoming Co. Original.
- Palmer, Henry C., cor. Genesee and Hopper Sts., Utica, Oneida Co.
- Palmer, Walter B., 30 South St., Utica, Oneida Co.
- Parent, J. S., Bирchton, Saratoga Co.
- Parker, Ransom J., 130 Lexington Ave., New York, New York Co.
- Parkhill, C. S., Hornellsville, Steuben Co.
- Parr, John, Buel, Montgomery Co.
- Parsons, Israel, Marcellus, Onondaga Co. Founder.
- Parsons, John, Kingsbridge, New York, New York Co. Original.
- Parsons, W. W. D., Fultonville, Montgomery Co.

- Pease, Joseph, Hamlin, Monroe Co. Original.
- Peele, Francis, 220 Schermerhorn St., Brooklyn, Kings Co.
- Perry, John Gardner, 48 E. 34th St., New York, New York Co.
- *Peters, Samuel, 86 Mohawk St., Cohoes, Albany Co. Founder.
- Pettit, John A., 519 Swan St., Buffalo, Erie Co. Original.
- Phelan, Francis, 1629 Fifth Ave., Troy, Rensselaer Co.
- Phelps, Charles, 34 W. 37th St., New York, New York Co.
- Phelps, George G., 239 Blandina St., Utica, Oneida Co.
- Phelps, William C., 146 Allen St., Buffalo, Erie Co.
- Pierce, Edward A., Binghamton, Broome Co.
- Pierson, George E., Kirkwood, Broome Co. (Retired list.)
- Piper, Charles W., Wurtsborough, Sullivan Co.
- Place, John F., Jr., Binghamton, Broome Co.
- Pohlman, Julius, 382 Franklin St., Buffalo, Erie Co.
- Pooler, Hiram A., 34 Gramercy Park, New York, New York Co.
Original. (Retired list.)
- Porter, H. N., 1910 Harewood Ave., Washington, D. C. Founder.
(Retired list.)
- Potter, E. Styles, 64 W. 55th St., New York, New York Co.
- Potter, Vaughn C., Starkville, Herkimer Co. Original.
- Potts, E., Port Jervis, Orange Co.
- Pratt, Frank R., Manchester, Ontario Co.
- Pray, S. R., 191 South 9th St., Brooklyn, Kings Co. Original.
- *Preston, John R., Schuylerville, Saratoga Co. Original.
- Price, Henry R., 485 Franklin Ave., Brooklyn, Kings Co.
- Prince, Alpheus, Byron, Genesee Co.
- Pritchard, R. L., 72 W. 49th St., New York, New York Co.
- Pultz, Monroe T., Stanfordville, Dutchess Co. Founder.
- Purple, S. S., 36 W. 22d St., New York, New York Co. Founder.
- Putnam, Frederick W., Binghamton, Broome Co. Founder.
- Race, W. F., 115 W. 25th St., Kearney, Neb. Original.
- Rae, Robert, Portageville, Wyoming Co. Original.
- Rave, Edward G., Hicksville, Queens Co. Original.
- Raynor, F. C., 163 Clinton St., Brooklyn, Kings Co.
- Read, Ira B., 2074 Fifth Ave., New York, New York Co.
- Reagles, James, Schenectady, Schenectady Co. Original.
- Reed, Albert, Highland, Ulster Co.
- Reed, Henry B., 545 Franklin Ave., Brooklyn, Kings Co.
- Reese, Frank D., Cortland, Cortland Co.
- Reid, Christopher C., Rome, Oneida Co.
- Reid, W. B., Rome, Oneida Co.

* Deceased.

Reitz, Charles, Webster, Monroe Co.

Reynolds, Tabor B., Saratoga Springs, Saratoga Co. Founder.

Richards, Charles B., Binghamton, Broome Co. Founder.

Richardson, John E., 127 S. Oxford St., Brooklyn, Kings Co.

Ricketts, Benjamin M., 137 Broadway, Cincinnati, O. Original.

Riley, Andrew W., 207 S. 16th St., Omaha, Neb. Original.

Risch, Henry F. W., 521 3d St., Brooklyn, Kings Co.

Robb, William H., Amsterdam, Montgomery Co. Founder.

Robinson, Ezra A., Geneva, De Kalb Co., Ill. Original.

Rochester, DeLancey, 469 Franklin St., Buffalo, Erie Co.

Rochester, Thomas M., 326 De Kalb Ave., Brooklyn, Kings Co.

Rodgers, Harris C., Benicia, Cal.

Rogers, S. Frank, 3161 6th Ave., Troy, Rensselaer Co. Original.

Rolph, R. T., Fredonia, Chautauqua Co.

Roper, P. B., Alpine, Schuyler Co.

Ross, Frank W., 251 Baldwin St., Elmira, Chemung Co. Original.

Roth, Julius A., 308 E. 79th St., New York, New York Co.

Rousseau, Zotique, 105 2d St., Troy, Rensselaer Co. Founder.

Rudgers, Denton W., Hornellsville, Steuben Co.

Ruggles, Augustus D., 284 St. Nicholas Ave., New York, New York Co.

Rulison, L. B., Watervliet, Albany Co.

Rushmore, J. D., 129 Montague St., Brooklyn, Kings Co. Founder.

Russell, Charles P., 198 Genesee St., Utica, Oneida Co.

Russell, William G., 27 McDonough St., Brooklyn, Kings Co. Original.

Sabal, E. T., 45 W. Monroe St., Jacksonville, Fla. (Non-resident.)

Sabin, Wm. B., 1425 Broadway, Watervliet, Albany Co. Founder.

Sale, E. Paul, Masonic Temple, Memphis, Tenn.

Sanders, E., 126 E. 82d St., New York, New York Co.

Santry, A. B., Little Falls, Herkimer Co.

Sawyer, Conant, Auburn, Cayuga Co. Founder.

Saxer, L. A., 514 Prospect Ave., Syracuse, Onondaga Co. Original.

Sayre, Lewis A., 285 5th Ave., New York, New York Co. Founder.

Sayre, Reginald H., 285 5th Ave., New York, New York Co.

Schmid, H. Ernst, White Plains, Westchester Co. Original.

Schopp, Justin H., 127 E. Main St., Rochester, Monroe Co.

Scully, Thomas P., Rome, Oneida Co.

Seaman, Louis L., 18 W. 31st St., New York, New York Co.

Seaman, Frank G., Seneca Falls, Seneca Co.

Sears, F. W., 326 Montgomery St., Syracuse, Onondaga Co.

Segur, Avery, 281 Henry St., Brooklyn, Kings Co. Founder.
(Retired list.)

Selden, Robert, Catskill, Greene Co. Original.

Seymour, Ralph A., Whitney's Point, Broome Co.

Seymour, W. Wotkyns, 105 3d St., Troy, Rensselaer Co. Founder.

Sharer, John P., Little Falls, Herkimer Co. Original.

Shaw, Henry B., 21 E. 127th St., New York, New York Co.

Shea, Dennis L., 116 Waverley Place, New York, New York Co.

Sheffield, J. W., Sidney, Delaware Co.

Shepard, A. W., 126 Willoughby St., Brooklyn, Kings Co. Original.

Sherer, John D., Waterford, Saratoga Co. Original.

Sherman, F. J., Ballston, Saratoga Co.

Shrady, Arthur M., 60 W. 38th St., New York, New York Co.

Shrady, John, 140 W. 126th St., New York, New York Co.

Shrady, John Eliot, 149 W. 126th St., New York, New York Co.

Silver, Henry M., 105 W. 72d St., New York, New York Co.

Simmons, Charles E., 762 Madison Ave., New York, New York Co.

Simmons, E. W., Canandaigua, Ontario Co. Founder. (Retired
list.)

Simons, Frank E., Canajoharie, Montgomery Co.

Sizer, Nelson Buell, 336 Green Ave., Brooklyn, Kings Co. Original.

Skinner, Smith A., Hoosick Falls, Rensselaer Co. Original.

(Retired list.)

Slater, Frank Ellsworth, Binghamton, Broome Co.

Small, John W., 222 Neperham Ave., Yonkers, Westchester Co.

Smelzer, Baxter T., Montour Falls, Schuyler Co.

Smith, Alexander H., 40 W. 47th St., New York, New York Co.

Smith, Edward L., Binghamton, Broome Co.

Smith, F. A., Corinth, Saratoga Co.

Smith, Frederick A., 3 Clinton Place, Troy, Rensselaer Co.

Smith, George C., Delhi, Delaware Co.

Smith, H. Lyle, Hudson, Columbia Co. Original.

*Smith, J. Lewis, 64 W. 56th St., New York, New York Co.
Original.

Smith, Samuel L., Smithville Flats, Chenango Co.

Smith, Samuel W., Hotel San Remo, 75th St., New York, New
York Co. Original.

Smith, Stephen, 640 Madison Ave., New York, New York Co.
Original.

Smyth, Arthur V. H., Amsterdam, Montgomery Co.

Snook, George M., Parma, Monroe Co.

* Deceased.

Southworth, Richmond Joseph, 1220 36th St., N. W., Washington,
D. C. Original. (Retired list.)

Spicer, Walter E., 62 Charlton St., New York, New York Co.

*Sprague, John A., Williamson, Wayne Co. Original.

*Sprague, L. S., Williamson, Wayne Co. (Retired list.)

Squibb, Edward H., 148 Columbia Heights, Brooklyn, Kings Co.
Founder. (P. O. Box 760.)

Squibb, Edward R., 152 Columbia Heights, Brooklyn, Kings Co.
Founder.

Squire, Charles L., 409 E. Church St., Elmira, Chemung Co.

Stearns, Benjamin W., Long Eddy, Sullivan Co.

Steinke, C. O. H., 220 17th St., Brooklyn, Kings Co. Original.

Stewart, Douglas H., 111 W. 64th St., New York, New York Co.

Stewart, F. E., West Broadway and Franklin St., New York, New
York Co.

Stewart, George D., 130 E. 36th St., New York, New York Co.

St. John, David, Hackensack, N. J. (Non-resident.)

Stockschlaeder, P., 186 South Ave., Rochester, Monroe Co.

Stockton, Charles G., 436 Franklin St., Buffalo, Erie Co.

Stone, Frank L., LeRoy, Genesee Co.

Stout, E. G., St. Lawrence State Hospital, Ogdensburgh, St. Law-
rence Co.

Strong, Cyrus J., 49 W. 35th St., New York, New York Co.

Strong, Orville C., Colden, Erie Co.

Strong, Thomas D., Westfield, Chautauqua Co. Founder.

Stubbs, Roland H., Waterford, Saratoga Co. Original.

Sullivan, John D., 74 McDonough St., Brooklyn, Kings Co.

Swan, William E., Saratoga Springs, Saratoga Co.

Swanick, A. A., Saratoga Springs, Saratoga Co.

Swartwout, H. B., Port Jervis, Orange Co.

Swartwout, Leander, Prospect, Oneida Co.

Sweeney, James M., 78 Varick St., Utica, Oneida Co.

Sweet, Joshua J., Unadilla, Otsego Co.

Sweetman, J. T., Jr., Ballston, Saratoga Co.

Syms, Parker, 60 W. 47th St., New York, New York Co.

Taber, R. C., Tonawanda, Erie Co.

Taylor, John H., Holley, Orleans Co. Original.

Tefft, Charles B., Room 20, Arcade, Utica, Oneida Co.

Thayer, William Henry, Berkshire, Mass. (Retired list.)

Thomas, T. Gaillard, 600 Madison Ave., New York, New York Co.
Founder.

Thompson, R. A., Norwich, Chenango Co.

*Deceased.

- Thompson, Amos W., Saratoga Springs, Saratoga Co.
Thompson, Von Beverhout, 111 W. 43d St., New York, New York Co.
Thornton, William H., 572 Niagara St., Buffalo, Erie Co.
Thwing, Clarence, Ft. Wrangel, Alaska.
Todd, John B., Parish, Oswego Co.
Tompkins, Fred J., 128 2d Ave., Lansingburgh, Rensselaer Co.
Tompkins, H. C., Knowlesville, Orleans Co. Founder. (Retired list.)
Tompkins, Orren A., East Randolph, Cattaraugus Co. Original.
Townsend, Charles E., 231 Liberty St., Newburgh, Orange Co.
Townsend, Morris W., Bergen, Genesee Co. Founder.
Trautman, Alex., 12 W. 22d St., New York, New York Co.
Travis, Edward M., Eagle Grove, Iowa.
Tremaine, Wm. S., 217 Franklin St., Buffalo, Erie Co. Founder.
Tripp, John D., Auburn, Cayuga Co. Original.
Truax, J. G., 17 E. 127th St., New York, New York Co.
Trull, H. P., Williamsville, Erie Co.
Tucker, Carlos P., 43 W. 26th St., New York, New York Co. Founder.
Turner, Melvin H., Ticonderoga, Essex Co. Original.
Tuttle, Charles Alling, 129 Whalley Ave., New Haven, Conn. (Non-resident.)
Twohey, John J., 301 Masten St., Buffalo, Erie Co.
Vanderhoof, Frederick D., Phelps, Ontario Co. Original.
Vanderveer, J. C., Monroe, Orange Co.
Vanderveer, J. R., Monroe, Orange Co.
Van de Warker, Ely, 404 Fayette Park, Syracuse, Onondaga Co. Founder.
Van Etten, Cornelius S., Rhinebeck, Dutchess Co.
Van Hovenberg, Henry, Kingston, Ulster Co. Original.
Van Vranken, Adam T., 1603 3d Ave., Watervliet, Albany Co. Original.
Van Wagner, L. A., Sherburne, Chenango Co.
Van Zandt, Henry C., Schenectady, Schenectady Co. Original.
Varney, Miles E., Saratoga Springs, Saratoga Co.
Vedder, George W., Philmont, Columbia Co.
Veeder, Andrew T., 93 Fifth Ave., Pittsburgh, Pa.
Von Dönhoff, Edward, 82 Christopher St., New York, New York Co.
Vincent, Ludger C., 350 W. 58th St., New York, New York Co.
Wakely, Benjamin C., Angelica, Alleghany Co. Original.
Wales, Theron A., Elmira, Chemung Co. Original.

Walker, James E., Hornellsville, Steuben Co.
 Wall, Charles A., 306 Hudson St., Buffalo, Erie Co.
 Wallace, Edwin E., Jasper, Steuben Co.
 Wallach, Joseph G., 7 W. 82d St., New York, New York Co.
 Original.

Walser, William C., West New Brighton, Richmond Co.
 Walsh, Simon J., 25 E. 128th St., New York, New York Co.
 Wandless, Henry W., 39 W. 36th St., New York, New York Co.
 Ward, Charles S., 30 W. 33d St., New York, New York Co.
 Founder.

Ward, John J., Ellenville, Ulster Co.
 Ward, R. H., 53 4th Street, Troy, Rensselaer Co.
 *Warner, Frederick M., 66 W. 56th St., New York, New York Co.
 Warner, John W., 107 E. 72d St., New York, New York Co.
 Washburn, Wickes, 21 E. 21st St., New York, New York Co.
 Waterworth, William, 3 Hancock St., Brooklyn, Kings Co.
 Webster, W. B., Schuylerville, Saratoga Co.
 Welles, S. R., Waterloo, Seneca Co. (Retired list.)
 Wells, William L., New Rochelle, Westchester Co. Original.
 West, Joseph E., 171 Genesee St., Utica, Oneida Co.
 Weston, Albert T., 226 Central Park West, between 82d and 83d
 Sts., New York, New York Co.

Wheeler, Isaac G., Marilla, Erie Co.
 Wheeler, John T., Chatham, Columbia Co.
 Whipple, Electa B., 491 Porter Ave., Buffalo, Erie Co.
 White, Charles B., 107 W. 72d St., New York, New York Co.
 White, J. Blake, 1013 Madison Ave., New York, New York Co.
 White, Whitman V., 114 E. 85th St., New York, New York Co.
 Founder.

White, William A., Binghamton, Broome Co.
 Whitford, James, Onondaga Valley, Onondaga Co. Original.
 Wieber, Adolph, 181 S. 5th St., Brooklyn, Kings Co.
 Wiener, Joseph, 1046 5th Ave., New York, New York Co. Founder.
 Wiggin, Frederick Holme, 55 W. 36th St., New York, New York
 Co.

Williams, George O., Green, Chenango Co.
 Williams, Henry Smith, 165 W. 82d St., New York, New York Co.
 Williams, William H., 207 17th St., Brooklyn, Kings Co. Original.
 Willoughby, M., 1335 Main St., Buffalo, Erie Co.
 Wilson, Thomas, Claverack, Columbia Co. Founder.
 Winne, J. V. E., Sidney, Delaware Co.

Witter, G. W., Wellsville, Alleghany Co.
 Woodend, William E., Hotel St. Andrew, West 72d St., New York,
 New York Co.
 Woodhull, Edward D., Monroe, Orange Co.
 Woodruff, E. Gould, Auburn, Cayuga Co.
 Woodruff, R. Allen, Philmont, Columbia Co.
 Woodworth, T. Floyd, Kinderhook, Columbia Co.
 Wyckoff, C. C., 482 Delaware Ave., Buffalo, Erie Co. Founder.
 Wyckoff, R. M., 532 Clinton Ave., Brooklyn, Kings Co. Founder.
 Wyeth, J. A., 27 E. 38th St., New York, New York Co. Original.
 Yankauer, Sidney, 163 E. 79th St., New York, New York Co.
 Young, Augustus A., Newark, Wayne Co. Original.
 Young, John D., Starkville, Herkimer Co. Original.
 Young, Wm., Cold Spring, Putnam Co. Founder. (Retired
 list.)
 Zeh, Edgar, Waterford, Saratoga Co.
 Zeh, Merlin J., 1521 Broadway, Watervliet, Albany Co.

Of 164 Founders, 94 remain on the list; of 286 Original Fellows,
 190 remain on the list. Total Fellowship, 790.

RETIRED FELLOWS.

Charles G. Bacon, Fulton, Oswego County (1891).
 M. M. Bagg, Utica, Oneida County (1891).
 George B. Banks, Hartsdale, Westchester County (1892).
 Lyman Barton, Willsborough, Essex County (1890).
 N. W. Bates, Central Square, Oswego County (1897).
 F. R. Bentley, Cheshire, Ontario County (1891).
 William N. Bonesteel, Troy, Rensselaer County (1890).
 Amos H. Brundage, Brooklyn, Kings County (1897).
 Alonzo Churchill, Utica, Oneida County (1890).
 C. L. Dayton, Buffalo, Erie County (1891).
 W. H. Flint, Ridgefield, Conn. (1895).
 Philip DuB. HoornBeek, Wawarsing, Ulster County (1891).
 *August Hühne, Rondout, Ulster County (1897).
 *Ernst Ilgen, 360 Herkimer St., Brooklyn, Kings County (1895).
 Samuel Ingraham, Palmyra, Wayne County (1890).
 Jonathan S. Kneeland, Onondaga County (1890).
 John B. Nold, Utica, Oneida County (1894).
 George E. Pierson, Kirkwood, Broome County (1895).
 H. A. Pooler, 34 Gramercy Park, New York, New York County
 (1892).
 *Deceased.

H. N. Porter, Washington, D. C. (1891).
 Avery Segur, 281 Henry St., Brooklyn, Kings County (1893).
 E. W. Simmons, Canandaigua, Ontario County (1892).
 S. A. Skinner, Hoosick Falls, Rensselaer County (1895).
 R. J. Southworth, Washington, D. C. (1894).
 *L. S. Sprague, Williamson, Wayne County (1891).
 W. H. Thayer, Berkshire, Mass. (1895).
 H. C. Tompkins, Knowlesville, Orleans County (1893).
 S. R. Welles, Waterloo, Seneca County (1894).
 William Young, Cold Spring, Putnam County (1891).

NON-RESIDENT FELLOWS.

N. P. Dandridge, 148 Broadway, Cincinnati, Ohio.
 Stuart Eldridge, Yokohama, Japan.
 Alfred C. McDaniel, San Antonio, Texas.
 Wm. Stevenson MacLaren, Litchfield, Conn.
 Donald Maclean, 72 Lafayette Ave., Detroit, Mich.
 William Scott Muir, Truro, Nova Scotia.
 E. T. Sabal, 45 W. Monroe St., Jacksonville, Fla.
 David St. John, Hackensack, N. J.
 Charles Alling Tuttle, 129 Whalley Ave., New Haven, Conn.

CORRESPONDING FELLOW.

Henry O. Marcy, 180 Commonwealth Ave., Boston, Mass. (1890).

* Deceased.

DECEASED FELLOWS.

DECEASED FELLOWS.

NAME.	AGE.	COUNTY.	PLACE OF BIRTH.	DATE OF DEATH.	MEDICAL COLLEGE.	YEAR OF GRADUATION.
Abell, Ira H. (F) ¹	71	Jefferson	Fairfield, Vt.	April 29, 1894.	Vermont Med. Coll.	1844
Adams, John G. (F)	77	New York	New York City	June 19, 1884.	Coll. Phys. and Surg., N. Y.	1830
Allaben, O. M. (O) ²	83	Delaware	Delaware Co., N. Y.	Nov. 27, 1891.	Woodstock, Vt.	1831
Andrews, John S. (O)	61	Kings	Bristol, Conn.	Jan. 3, 1889.	Univ. City of New York	1849
Andrews, Judson B. (F)	60	Erie	North Haven, Conn.	Aug. 3, 1894.	Yale Med. School	1863
Ashton, Isaiah H.	39	Westchester	Philadelphia, Pa.	Feb. 16, 1889.	University of Pennsylvania	1870
Avery, George W. (F)	61	Chenango	Earlville, N. Y.	Nov. 1, 1888.	Albany Medical College	1850
Ayres, Alexander (F)	74	Montgomery	Oppenheim, N. Y.	Aug. 27, 1886.	Castleton, Vt.	1842
Babcock, Myron N. (F)	73	Saratoga	West Berkshire, Vt.	May 21, 1892.	Vermont Medical College	1842
Ballou, William R.	29	New York	Bath, Me.	March 9, 1893.	Bellevue Hosp. Med. Coll.	1886
Barker, A. M. (O)	37	Erie	Kendall, Orleans Co., N. Y.	Dec. 6, 1887.	University of Buffalo	1877
Bathgate, James (O)	65	New York	New York	March 27, 1891.	Coll. Phys. and Surg., N. Y.	1846
Baynes, William T. (O)	48	Rensselaer	England	Jan. 22, 1892.	Albany Medical College	1871
Bemus, William P.	63	Chautauqua	Chautauqua Co.	Sept. 19, 1890.	Berkshire Medical College	1847
Bennett, Thos. W. (O)	62	Sullivan	Altona	Nov. 27, 1896.	University of N. Y.	1896
Blakeman, William N. (O)	85	New York	Roxbury, Conn.	Aug. 10, 1890.	Yale	1832
Buchanan, Alexander (O)	65	New York	Glasgow, Scot.	Sept. 2, 1896.	New York Med. Coll.	1862
Buckley, Charles (O)	..	Monroe	. . . . .	. . . . .	University of Pennsylvania	1870
Bucklin, Daniel D. (O)	70	Rensselaer	Brunswick, N. Y.	April 19, 1890.	Albany Medical College	1846
Budd, J. Henry (O)	45	Ontario	United States	Feb. 25, 1890.	Buffalo Medical College	1875
Burchard, Thos. H. (O)	48	New York	New York City	Nov. 15, 1896.	Bellevue Hosp. Med. Coll.	1872
Burton, M. H. (F)	62	Rensselaer	Albany, N. Y.	April 28, 1895.	Albany Medical College	1863

¹ (F) Founder.

² (O) Original Fellow.

Burwell, George N. (O) . . .	72	Erie . . .	Norway, Herkimer Co. . .	May 15, 1891.	University of Pennsylvania	1843
Carroll, Alfred Ludlow (F)	60	New York . . .	New York City . . .	Oct. 30, 1893.	Univ. City of New York .	1855
Case, Mary W.	33	Rensselaer . . .	New York State . . .	Aug. 19, 1889.	Woman's Med. Coll., Phila.	1882
Chace, William (F) . . .	58	Chautauqua . . .	St. Catharine's, Canada .	Dec. 27, 1891.	Coll. Phys. and Surg., N. Y.	1858
Church, Allen S. (F) . . .	62	New York . . .	Great Barrington, Mass..	Oct. 24, 1884.	Castleton, Vt.	1848
Clark, Alonzo	80	New York . . .	Chester, Mass.	Sept. 13, 1887.	Coll. Phys. and Surg., N. Y.	1835
Clark, Simeon T. (O) . . .	55	Niagara . . .	Canton, Mass.	Dec. 24, 1891.	Berkshire Med. Coll. . .	1860
Coit, William N. (F) . . .	52	Clinton . . .	Plattsburgh, N. Y. . . .	Aug. 4, 1886.	University of Pennsylvania	1856
Collins, Isaac G. (F) . . .	53	Westchester . . .	Granville, N. Y.	Dec. 18, 1885.	Albany Medical College .	1858
Collins, Thomas B. (O) . . .	61	Monroe . . .	Mendon, N. Y.	Feb. 17, 1888.	Jefferson Med. Coll., Phila.	1851
Cooper, William S. (F) . . .	70	Rensselaer . . .	Scotland	May 26, 1890.	Albany Medical College .	1860
Copley, Heman D.	45	Chenango . . .	Harpersfield, N. Y. . . .	July 1, 1896.	Coll. Phys. and Surg., N. Y.	1875
Cornell, F. O. (O)	29	Montgomery . . .	Glenville, N. Y.	Dec. 3, 1884.	Albany Medical College .	1880
Cotes, J. R.	54	Genesee . . .	Batavia, N. Y.	March 20, 1884.	Med. Dep. Univ. Buffalo .	1852
Creamer, Joseph	63	Kings . . .	Halifax, Nova Scotia . .	Jan. 6, 1893.	Coll. Phys. and Surg., N. Y.	1850
Cruttenden, Albert G. . . .	75	Ontario . . .	Covington, N. Y.	June 7, 1890.	Willoughby Univ., Ohio .	1840
Dagenais, Alphonse (O) . .	50	Erie . . .	Montreal, Can.	March 4, 1897.	Victoria University . . .	1869
Damainville, Lucien	52	New York . . .	Erie, Pa.	Dec. 15, 1891.	Long Island Coll. Hosp. .	1860
Davidson, John (F)	91	Queens . . .	New York City	Dec. 26, 1884.	Lic. N. Y. St. Med. Soc. .	1829
De La Mater, S. G. (F) . . .	73	Schenectady . . .	Bethlehem, Alb. Co., N. Y.	June 23, 1888.	Albany Medical College .	1842
de Zouche, Isaac (F)	72	Fulton . . .	. . . . .	Feb. 22, 1895.	Albany Med. Coll.	1869
Du Bois, Abram (F)	81	New York . . .	Red Hook, N. Y.	Aug. 29, 1891.	Coll. Phys. and Surg., N. Y.	1835
Eager, William B. (O) . . .	65	Orange . . .	Orange Co.	Jan. 18, 1890.	Coll. Phys. and Surg., N. Y.	1848
Earll, George W. (F)	53	Onondaga . . .	Mottville, N. Y.	July 8, 1890.	Buffalo Medical College .	1858
Edgerly, Edward F. (F) . . .	50	Essex . . .	Moriah, Essex Co.	June 23, 1889.	Albany Medical College .	1864
Elder, Jennie S.	32	Onondaga . . .	Syracuse, N. Y.	Feb. 2, 1889.	Med. Dep. Syracuse Univ.	1878
Farrington, E. S.	30	New York . . .	. . . . .	Sept. 7, 1896.	Coll. Phys. and Surg., N. Y.	1892
Ferguson, James (O)	74	Warren . . .	Kortwright, N. Y.	Oct. 27, 1892.	Castleton, Vt.	1841

DECEASED FELLOWS.—Continued.

NAME.	AGE.	COUNTY.	PLACE OF BIRTH.	DATE OF DEATH.	MEDICAL COLLEGE.	YEAR OF GRADUATION.
Field, M. D.	41	New York	Nashville, Tenn.	March 8, 1895.	Bellevue Hosp. Med. Coll. .	1879
Fitch, William (F)	70	Tompkins	Franklin, N. Y.	Sept. 14, 1893.	Albany Medical College .	1846
Flint, Austin (F)	73	New York	Petersham, Mass.	March 13, 1886.	Harvard Medical College .	1833
Flood, Patrick Henry (O) .	72	Chemung	Pennsylvania	March 12, 1886.	Geneva Medical College .	1845
Fox, Eli	57	Herkimer	Columbia, N. Y.	Oct. 13, 1890.	Med. Dep. Univ. City N. Y.	1855
Fuller, Winfield S. (O) . .	48	Monroe	Walworth, N. Y.	Jan. 13, 1888.	Coll. Phys. and Surg., N. Y.	1861
Fuller, Robert	72	Schenectady	Schenectady, N. Y.	May 9, 1894.	Albany Med. Coll.	1875
Furman, Guido (O)	65	New York	Germany	Dec. 2, 1896.	University City of N. Y. .	1856
Furman, J. Henry (O) . . .	63	Westchester	Clifton Park, N. Y.	May 26, 1896.	Coll. Phys. and Surg., N. Y.	1864
Garrish, John P. (O)	76	New York	New Brunswick, N. J. . . .	April 1, 1891.	Jefferson Med. Coll., Phila.	1836
Gay, Charles C. F. (F) . . .	66	Erie	Pittsfield, Mass.	March 27, 1886.	Berkshire Medical College	1846
Gillis, William (F)	72	Franklin	Cornwall, Can.	Feb. 17, 1894.	Castleton, Vt.	1849
Goldthwaite, Henry	52	New York	Mobile, Ala.	Jan. 3, 1895.	Bellevue Hosp. Med. Coll.	1876
Govan, William (F.)	65	Rockland	Barnet, Vt.	March 22, 1894.	New York Med. Coll. . .	1854
Graves, Ezra (O)	56	Montgomery	Russia, N. Y.	June 30, 1895.	University of Buffalo . .	1865
Gray, John Perdue (F) . . .	61	Oneida	Half Moon, Pa.	Nov. 29, 1886.	University of Pennsylvania	1849
Gray, John W. (F)	53	Livingston	America	April 17, 1886.	University of New York .	1856
Green, Caleb (F)	73	Cortland	La Fayette, N. Y.	May 10, 1893.	Geneva Medical College .	1844
Griswold, Gaspar (O) . . .	29	New York	New York City	March 4, 1886.	Bellevue Hosp. Med. Coll.	1878
Guernsey, Desault (F) . . .	55	Dutchess	Wilton, N. Y.	Dec. 9, 1885.	Coll. Phys. and Surg., N. Y.	1850
Hall, H. C. (O)	41	Broome	America	June 1, 1887.	University of New York .	1869
Hall, John E. (O)	38	Albany	New Marlboro', Mass. . . .	Nov. 3, 1886.	Albany Medical College .	1877

Hamilton, Frank H. (F)	73	New York	Wilmington, Vt. . . .	Aug 11, 1886.	University of Pennsylvania	1835
Hammer, Charles . . .	65	Schenectady . . .	Germany	April 7, 1897.	Goettingen, Germany . .	1854
Higgins, Seabury M. (O)	67	Onondaga	Brewster, Mass. . . .	Dec. 9, 1889.	University City of N. Y. .	1848
Hinds, Frederic J. (O) .	32	Washington . . .	East Greenwich, N. Y. .	April 26, 1887.	Bellevue Hosp. Med. Coll.	1876
Hogan, Michael K. . . .	64	New York	County Clare, Ireland .	Feb. 25, 1894.	Coll. Phys. and Surg., N. Y.	1858
Hollister, Edwin O. (O)	41	Ontario	Batavia, N. Y.	Oct. 8, 1887.	Bellevue Hosp. Med. Coll.	1874
Hubbard, George E. . .	86	New York	Natural Bridge, N. Y. .	March 23, 1893.	Med. Dep. Univ. City N. Y.	1883
Hubbard, Samuel T. (F.)	36	New York	Haddam, Conn.	June 1, 1894.	Coll. Phys. and Surg., N. Y.	1835
Hughes, Henry R. . . .	47	Oneida	So. Trenton, N. Y. . .	Sept. 27, 1894.	Bellevue Hosp. Med. Coll.	1876
Hilme, August (F) . . .	76	Ulster	Germany	Dec. 2, 1897.	New York Med. Coll. . .	1858
Hull, William H. . . .	51	Rensselaer	Petersburgh, N. Y. . .	Dec. 1, 1894.	Albany Med. Coll. . . .	1866
Hunt, James H. (O) . .	44	Orange	Centreville, Sullivan Co.	Dec. 20, 1892.	Bellevue Hosp. Med. Coll.	1872
Huntington, H. K. (O) .	..	Westchester . . .	. . . . .	Feb. 28, 1897.	. . . . .	....
Husted, N. C. (F) . . .	66	Westchester . . .	Round Hill, Conn. . .	Nov. 19, 1891.	University City of N. Y. .	1850
Hutchison, Joseph C. (F)	60	Kings	Old Franklin, Mo. . . .	July 17, 1887.	University of Pennsylvania	1848
Hyde, Frederick (F) . .	80	Cortland	Whitney Point, N. Y. .	Oct. 15, 1887.	Fairfield Medical College .	1836
Ilgel, Ernst (O)	82	Kings	Bavaria.	Mar. 4, 1897.	Munich.	1836
Johnston, Francis U. (F)	66	Richmond	New York City	Nov. 20, 1892.	Coll. Phys. and Surg., N. Y.	1852
King, James E. (O) . . .	66	Erie	Warren, Pa.	Jan. 21, 1888.	Buffalo Medical College .	1848
Kittridge, Chas. S. (F)	..	Dutchess . . . . .	. . . . .	. . . . .	Coll. Phys. and Surg., N. Y.	1863
Knapp, Edwin A. (O) . .	67	Onondaga	New York State	Dec. 7, 1890.	Geneva Med. Coll. . . .	1851
Knapp, John H. (O) . .	67	Cortland	New Fairfield, Conn. . .	April 30, 1886.	{ Chenango Co. Med. Soc.	1843
Lamb, Milton M.	68	Rensselaer	Verona, N. Y.	April 10, 1892.	{ Geneva Med. Coll. . .	1861
Lamont, John Campbell	47	Wayne	Edinburgh, Scotland . .	Dec. 13, 1887.	Castleton, Vt.	1856
Lauer, Eugene (O) . . .	40	New York	Germany	Oct. 31, 1886.	Med. Dep. Univ. City N. Y.	1862
Lester, Sullivan W. (O)	40	Rensselaer	Niantic, Conn.	Jan. 5, 1890.	Giesen and Marburg . .	1868
Linsly, Jared (F)	84	New York	Northfield, Conn. . . .	July 12, 1887.	Med. Dep. Univ. City N. Y.	1881
					Coll. Phys. and Surg., N. Y.	1829

DECEASED FELLOWS.—Continued.

NAME.	AGE.	COUNTY.	PLACE OF BIRTH.	DATE OF DEATH.	MEDICAL COLLEGE.	YEAR OF GRADUATION.
Long, Alfred J.	71	Washington	Rutland, Vt.	Aug. 10, 1895.	Univ. City of New York. .	1853
Lusk, William T. (F) . . .	59	New York	Norwich, Conn.	June 12, 1897.	Bellevue Hosp. Med. Coll.	1864
Lyman, E. S. (O)	80	Chenango	Torrington, Conn.	Nov. 20, 1892.	Regents Univ. N. Y. . . .	1870
Magee, C. M. . . . .	..	Onondaga	. . . . .	Oct. 29, 1896.	. . . . .	....
Magee, Daniel (O) . . . . .	..	Rensselaer	. . . . .	. . . . .	. . . . .	....
Mathews, David	60	New York	Sullivan County	July 9, 1891.	Coll. Phys. and Surg., N. Y.	1890
Maury, Rutson	27	New York	North Carolina	May 5, 1892.	Bellevue Hosp. Med. Coll.	1887
McClellan, Christopher R. .	73	Kings	Maryland	Jan. 13, 1887.	University of Maryland. .	1835
McEwen, Robert C. (F) . .	60	Saratoga	Bainbridge, N. Y.	Dec. 26, 1893.	Coll. Phys. and Surg., N. Y.	1856
McNamara, L. J. (O) . . . .	..	New York	. . . . .	Jan. 28, 1897.	. . . . .	....
McTammany, George H. . .	31	Rensselaer	Troy, N. Y.	April 12, 1891:	Albany Medical College .	1884
McTammany, Wm. F. (O) . .	36	Rensselaer	Troy, N. Y.	July 21, 1888.	Bellevue Hosp. Med. Coll.	1880
Meritt, George (O)	49	Rensselaer	Hudson, N. Y.	Aug., 1894.	Castleton Med. Coll. . . .	1850
Mitchell, Howard E. (F.) . .	47	Albany	Troy, N. Y.	Sept. 9, 1886.	University of Maryland .	1882
Moore, Joseph W. (F)	79	Chemung	Cornish, Me.	Sept. 8, 1887.	Castleton, Vt.	1859
Murdoch, J. B.	66	Non Resident	Glasgow, Scot.	Oct. 29, 1896.	Bowdoin Medical College .	1832
Nichols, Henry W. (F) . . .	75	Ontario.	Whiting, Vt.	May 11, 1895.	Coll. Phys. and Surg., N. Y.	1854
O'Meagher, William	67	New York	Killenaule, Ireland . . .	Feb. 26, 1896.	Geneva Med. Coll.	1857
Pask, William (O)	55	Erie	England	Aug. 24, 1884.	University of New York .	1884
Peck, M. R. (O)	62	Warren	Sand Lake, N. Y.	April 4, 1884.	Med. Dep. Univ. Buffalo .	1851
Perry, Nathaniel M. (O) . .	77	Steuben	Troupsburg, N. Y.	April 3, 1894.	Albany Medical College .	1845
Pollard, Abiathar	90	Essex	Bridgewater, Vt.	April 15, 1893.	Geneva Med. Coll.	1836
					Castleton, Vt.	1836

Pomeroy, Charles G. (F)	71	Wayne . . .	New York . . .	Dec. 14, 1887.	{ Ontario Co. Med. Soc. . . { Jefferson Medical Coll. .	1837 1850
Porteous, J. G. (F)	56	Dutchess . .	Moriah, N. Y. . .	July 11, 1895.	Harvard	1862
Preston, John R. (O)	89	Saratoga . .	Norway, N. Y. . .	Jan. 2, 1898.	Fairfield Med. Coll. . . .	1833
Pryer, W. Chardavoyne (F)	54	Westchester .	New York City . .	Sept. 24, 1888.	Coll. Phys. and Surg., N. Y.	1862
Purdy, Isaac (O)	57	Sullivan . .	Walkill, N. Y. . .	Dec. 6, 1885.	Castleton, Vt.	1851
Ransom, H. B. . . .	..	New York . .	. . . . .	July 27, 1895.	Coll. Phys. and Surg., N. Y.	1857
Reynolds, Rufus C. (F)	79	Monroe . .	Columbia, Herkimer Co.	Dec. 22, 1886.	Fairfield Med. Coll., N. Y.	1830
Rice, George	44	Saratoga . .	Mechanicsville, N. Y.	Jan. 12, 1894.	Albany Med. Coll.	1872
Ring, William (F)	63	Erie	United States . . .	April 20, 1887.	University of Buffalo . .	1848
Robinson, Joseph W.	49	Steuben . .	Angelica, N. Y. . .	Jan. 4, 1887.	Buffalo Medical College .	1862
Rochester, Thomas F. (F)	63	Erie	Rochester, N. Y. . .	May 24, 1887.	University of Pennsylvania	1848
Sabin, Robert Hall (F)	56	Albany . . .	Saxton's River, Vt. .	Dec. 4, 1888.	Albany Medical College .	1856
Sabine, G. A. (O)	84	New York . .	County Dorset, Eng.	Nov. 17, 1896.	Royal Coll. Surg., London.	1832
Sayre, Lewis Hall (F)	38	New York . .	New York City . . .	Jan. 2, 1890.	Bellevue Hosp. Med. Coll.	1876
Schoonmaker, E. J. (F)	65	Seneca . . .	Ulster Co., N. Y. . .	Aug. 19, 1889.	Geneva Medical College .	1848
Selden, O. G. (O)	77	Greene . . .	Perthshire, Scot. . .	Jan. 27, 1895.	Starling Med. Coll. . . .	1867
Skiff, George V. (O)	53	New York . .	Pike, N. Y.	Jan. 28, 1890.	Univ. City of New York .	1860
Slack, Henry (F)	57	Dutchess . .	Albany, N. Y. . . .	Dec. 10, 1886.	Albany Medical College .	1852
Slocum, J. O. (F)	65	Onondaga . .	Pompey, N. Y. . . .	Mar. 3, 1885.	Castleton, Vt.	1846
Smith, David M. . . .	35	Yates	New York City . . .	Mar. 19, 1891.	Bellevue Hosp. Med. Coll.	1877
Smith, J. Lewis (O)	70	New York . .	Onondaga Co., N. Y.	June 9, 1897.	Coll. Phys. and Surg., N. Y.	1853
Smith, Joseph T. (F)	60	Ontario . . .	Farmington, N. Y. .	Dec. 9, 1890.	Jefferson Med. Coll., Phila.	1854
Smith, Marcellus R. (O)	74	Cortland . .	Taylor, N. Y. . . .	Dec. 11, 1890.	Geneva Medical College .	1847
Sprague, J. A. (O)	43	Wayne	Williamson, N. Y. . .	Mar. 9, 1897.	Univ. City of New York.	1879
Sprague, Lathrop S. .	77	Wayne	Bristol, N. Y. . . .	Dec. 4, 1897.	Geneva Med. Coll. . . .	1845
Sprague, William B. (F)	55	Genesee . . .	Pavilion, N. Y. . . .	Mar. 16, 1891.	University of Buffalo . .	1857
Squire, Truman Hoffman	66	Chemung . . .	Russia, Herkimer Co.	Nov. 27, 1889.	Coll. Phys. and Surg., N. Y.	1848

DECEASED FELLOWS.—*Concluded.*

NAME.	AGE.	COUNTY.	PLACE OF BIRTH.	DATE OF DEATH.	MEDICAL COLLEGE.	YEAR OF GRADUATION.
Steele, Charles G.	27	Erie	Buffalo, N. Y.	Feb. 12, 1888.	University of Buffalo . . .	1886
Steinführer, Gustavus A. (F)	37	Schenectady	Germany	July 2, 1890.	Coll. Phys. and Surg., N. Y.	1874
Stevens, Frederick P. (O) . .	31	New York	Ithaca, N. Y.	Dec. 4, 1884.	Bellevue Hosp. Med. Coll.	1877
Stevenson, William G. . . .	44	Rockland	Troy, Ohio	Feb. 3, 1888.	Bellevue Hosp. Med. Coll.	1864
Sutton, George Samuel . . .	63	Dutchess	Louisville, N. Y.	Sept. 6, 1888.	Coll. Phys. and Surg., N. Y.	1859
Sweet, Joseph (O)	73	Otsego	Falland, Conn.	Aug. 3, 1895.	Philadelphia Med. Coll. . .	1848
Taylor, Isaac E. (F)	79	New York	Philadelphia, Pa.	Oct. 30, 1889.	University of Pennsylvania	1834
Traver, Richard D. (O) . . .	56	Rensselaer	Half Moon, N. Y.	May 17, 1895.	Bellevue Hosp. Med. Coll.	1867
Van Dusen, Melville E. . . .	36	Steuben	Wheeler, N. Y.	June 15, 1891.	Med. Dep. Univ. Mich. . .	1879
VanWyck, R. C. (O)	52	Dutchess	Hopewell Junction, N. Y.	Jan. 28, 1896.	Coll. Phys. and Surg., N. Y.	1867
Vaughn, Frank O. (O)	44	Erie	Buffalo, N. Y.	Mar. 18, 1891.	Med. Dep. Buffalo Univ. .	1880
Warner, Fred. M. . . . .	..	New York . . . . .	. . . . .	Oct. 9, 1895.	Coll. Phys. and Surg., N. Y.	1880
Webb, Edwin (O)	85	Queens	Devonport, England . . .	Jan. 29, 1890.	Coll. Phys. and Surg., N. Y.	1825
West, M. Calvin	58	Oneida	Rome, N. Y.	Oct. 20, 1891.	Michigan University . . .	1800
White, Francis V.	56	New York	New York City	Oct. 9, 1889.	Univ. City of New York . .	1855
White, William T. (F)	64	New York	Richmond, Me.	Sept. 17, 1893.	New York Med. Coll. . . .	1855
Wieber, George (O)	70	Kings	Weitzler, Germany	Jan. 31, 1896.	Kings Co. Med. Soc. . . .	1875
Willis, A. B.	43	Schenectady	Coeymans, N. Y.	May 10, 1891.	Albany Medical College . .	1870
Winship, Cornelius A. (O) . .	62	Rensselaer	Litchfield, Conn.	Feb. 14, 1888.	Albany Medical College . .	1858
Wood, Charles S. (F)	65	New York	Litchfield, Conn.	Feb. 1, 1890.	Jefferson Med. Coll., Phila.	1851
Woodend, William D. (F) . .	61	Suffolk	Portsmouth, Va.	Mar. 8, 1893.	University of Pennsylvania	1855
Young, John (O)	71	Dutchess	Ireland	Sept. 2, 1893.	Coll. Phys. and Surg., N. Y.	1844
Young, Oscar H. (O)	43	Delaware	Pennsylvania	Jan. 21, 1889.	Jefferson Med. Coll., Phila.	1876

ORGANISATIONS IN AFFILIATION WITH THE NEW
YORK STATE MEDICAL ASSOCIATION.

HORNELLSVILLE MEDICAL ASSOCIATION.

KINGS COUNTY MEDICAL ASSOCIATION.

MEDICAL ASSOCIATION OF TROY AND VICINITY.

NEW YORK COUNTY MEDICAL ASSOCIATION.

ONTARIO COUNTY MEDICAL SOCIETY.

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